BROWNFIELD SOLUTIONS LTD

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

MODULEK

Wrexham FC Training Ground

Phase II Geo-Environmental Assessment Report

JL/C6579/15586 Rev A

July 2026

EXECUTIVE SUMMARY	
Location and Brief Site Description	The site is currently occupied by Colliers Park sports complex, with associated commercial buildings, hard standing car parks, storage compounds, and soft landscaped land. A number of manholes/drains are present at the surface. Street lights are present cross cutting the site east to west. A large shipping container is present towards the south of the site.
Ground Conditions	Generalised ground conditions from the ground investigation comprise made ground encountered within every hole from ground level to between 3.90m and 5.45m bgl.
Concrete Classification	DS-3 AC-3 conditions prevail.
Site Drainage	Drainage to soakaways is considered potentially suitable for this site. Indicative soil infiltration rates range from $1.05x10^{-3}$m/s to $4.02x10^{-5}$m/s
Human Health - Soils Contamination	Based on the testing and assessment undertaken, no further action is required in respect to human health risks from soils contamination, based on the intended end use.
Controlled Waters – Surface and Groundwater Contamination	The overall risk to controlled waters is considered to be low and no further action is required.
Ground Gas	Based on the completed monitoring program and ground gas risk assessment , the site is classified as CS1 – No protection is required (excluding Radon).
Outline Remedial Strategy	• Full radon protective measures are necessary according to current guidance. • Verification of the above with validation reports produced.
Waste	Based on the waste classification database assessment, the majority of the made ground soils have been classified as non-hazardous, however the made ground soils associated with the shallow gravel in WS103 have been classified as hazardous.
Further Work	The following further works will be required to progress to the construction phase: • Detailed foundation design by a structural engineer. • Production of Ground Gas Protection Measures Verification Plan for radon protection. • Production of Materials Management Plan (MMP) under the CL:AIRE DoWCoP, if required.

This executive summary should be read in conjunction with the full report, reference JL/C6579/15586 Rev A and not as a standalone document. Report template version 4.12.

PROJECT QUALITY CONTROL DATA SHEET

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CONTENTS

1.0 INTRODUCTION 1
1.1 Context 1
1.2 Proposed Development 1
1.3 Previous Reports 1
1.4 Objectives 1
1.5 Scope 1
1.6 Limitations 1
2.0 THE SITE 4
2.1 Location 4
2.2 Site Desciption 4
2.3 Site History 4
2.4 Geological and Hydrogeological Setting 4
2.5 Environmental Setting 4
3.0 SUMMARY OF PREVIOUS REPORTS 6
4.0 METHOD OF INVESTIGATION 7
4.1 Objectives 7
4.2 Site Works 7
4.3 Sampling Strategy 7
4.4 Laboratory Testing 8
4.5 Monitoring 8
5.0 GROUND CONDITIONS 9
5.1 Summary 9
5.2 Made Ground 9
5.3 Natural Superficial Strata 9
5.4 Solid Geology 9
5.5 Groundwater 10
5.6 Observations 10
6.0 TEST RESULTS 11
6.1 In Situ Geotechnical Testing 11
6.2 Aggressive Ground Conditions – Geotechnical Chemical Testing 11
6.3 Geo-Environmental Testing 11
7.0 GEOTECHNICAL ASSESSMENT 12
7.1 Ground Model 12
7.2 Concrete Classification 12
7.3 Site Drainage 12
8.0 GEO-ENVIRONMENTAL RISK ASSESSMENT 14
8.1 Introduction 14
8.2 Soils Test Results and Risk Assessment – Human Health 14
8.3 Summary – Human Health Risk Assessment 14
8.4 Soil Test Results – Controlled Waters 14
8.5 Controlled Waters Risk Assessment 14
8.6 Permanent Ground Gas and Vapours Results 15
8.7 Ground Gas Risk Assessment 15
8.8 Qualitative Risk Assessment 17
8.9 Outline Remedial Measures 21
8.10 Health and Safety Issues 21

CONTENTS

9.0 WASTE SOIL CLASSIFICATION & ASSESSMENT 23

9.1 SUMMARY 23
9.2 SOILS WASTE CLASSIFICATION PROCEDURE 23
9.3 WASTE CLASSIFICATION AND WASTE ACCEPTANCE CRITERIA (WAC) 24
9.4 RE-USE OF SOILS 25

10.0 CONCLUSIONS 27

10.1 GEO-ENVIRONMENTAL 27
10.2 GEOTECHNICAL 27
10.3 FURTHER WORK 27

11.0 ABBREVIATIONS AND DEFINITIONS 28

12.0 REFERENCES 31

DRAWINGS

Drawing Number	Rev	Title
3284-MLK-XX-ZZ-DR-Y-1	2	Proposed Plans
C6579/01	-	Site Location Plan
C6579/02	-	Exploratory Hole Location Plan
C6579/03	-	Site Features Plan

APPENDICES

Appendix	Title
Appendix A	BSL Methodology and Guidance
Appendix B	Exploratory Hole Logs
Appendix C	Geotechnical Testing Results
Appendix D	Chemical Testing Results
Appendix E	Monitoring Results
Appendix F	Waste Assessment Report
Appendix G	CON29M Coal Mining Search
Appendix H	Environment Search

1.0 INTRODUCTION

1.1 Context

This report describes a Phase II Geo-Environmental Assessment carried out by Brownfield Solutions Limited (BSL) for Modulek on a site off Chester Road, Gresford, Wrexham, and has been completed in general accordance with the following guidance:

- Environment Agency guidance - Land Contamination: Risk Management (LCRM).
- BS 10175:2026 Investigation of Potentially Contaminated Sites.
- BS5930: 2015+A1:2020 Code of Practice for Ground Investigations.
- BS EN 1997-1:2004+A1:2013 Eurocode 7. Geotechnical design. General rules plus UK National Annex.
- BS EN 1997-2:2007 Eurocode 7 Geotechnical design. Ground investigation and testing plus UK National Annex.

Definitions of terms and acronyms used within this report is presented in Section 11.0.

1.2 Proposed Development

The proposed development is for a new first team pavilion, for which two potential locations have been proposed, as shown on the Proposed Plans, drawing No. 3284-MLK-XX-ZZ-DR-Y-1 Rev 2, provided to BSL by the client.

1.3 Previous Reports

This report should be read in conjunction with BSL Geotechnical Letter Report (JL/C6579/15383 Rev A) issued in March 2026.

1.4 Objectives

The objectives of this report are to identify potential sources of contamination associated with historical and current land uses, determine the geo-environmental setting and ground conditions of the site, highlighting potential risks and areas of concern that may govern the development under the current planning regime.

The factual and interpretive Phase II sections of this report are produced in general accordance with the recommendations for a Tier 2 Generic Quantitative Risk Assessment as described in LCRM guidance. This assessment is also intended to fulfil the requirements of a Ground Investigation Report (GIR) as detailed in BS EN 1997-2:2007.

1.5 Scope

Following the previous round of investigation and associated Geotechnical Letter Report, a supplementary intrusive investigation was undertaken to confirm the findings of the preliminary environmental risk assessment. The supplementary investigation was undertaken using trial pitting, window sampling, ground gas and groundwater monitoring, and laboratory chemical testing, with reporting on the findings.

A summary of previous investigations carried out at the site has also been undertaken.

1.6 Limitations

This assessment has been prepared in accordance with the relevant current legislative framework, guidance and risk assessment methodology as outlined in Appendix A. BSL is not liable for any subsequent changes in the guidance and legislation.

The findings and opinions conveyed via this report are based on information obtained from a number of sources as detailed within this report, BSL have assumed this information is correct and reliable. Nevertheless, BSL cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

BSL have used reasonable skill, care and diligence for the investigation of the site and the production of this report. There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this assessment and therefore have not been considered by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

This report has been prepared for the sole use and reliance of the Client, Modulek. No other third parties may rely upon or reproduce the contents of this report without the written permission of Brownfield Solutions Ltd (BSL). If any unauthorised third party comes into possession of this report, they rely on it at their own risk and BSL do not owe them any Duty of Care. This report may not be relied upon by the client or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full.

The investigation carried out on the site has been conducted to provide the best information on the ground conditions within site access and budgetary constraints. The inherent variation of ground conditions allows only for definition of the actual conditions at the locations and depths of exploratory locations at the time of the investigation. Different ground conditions may exist that have not been identified within this investigation.

The recommendations in this report assume that ground levels will remain as existing, unless stated otherwise within the report. If there is to be any re-profiling (e.g. to create development platforms or flood defences) then the recommendations may not apply.

The groundwater results described are only representative of the dates on which they were recorded, and levels may vary seasonally (e.g. due to changes in weather).

This assessment has been based on the proposed planning layouts provided. Any subsequent change to the planning layout may have an impact on the validity of recommendations made within this report. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

Although every effort has been made to position exploratory holes in the least sensitive areas of the site, exploratory hole positions were located approximately as part of this investigation and no guarantee can be given as to their accuracy. Consideration should be given to the possibility that exploratory holes excavated as part of this investigation and indeed any previous ground investigation work by others may be encountered beneath or within the influence of individual foundations. BSL cannot be held responsible for structural failures caused by the location of foundations of any form of structure within the influence of exploratory holes.

Where it has not been possible to reasonably use an EC7 compliant investigation technique, a practical alternative has been adopted to obtain indicative soil parameters and any interpretation is based upon engineering experience, local precedent where applicable and relevant published information.

The chemical testing carried out for this report was not scoped to comply with the requirements of the water supply company and further work may be required, unless otherwise stated.

Notwithstanding site observations concerning the presence or otherwise of archaeological issues, asbestos-containing materials (ACM) or invasive weeds (e.g. Japanese knotweed), this report does not constitute a formal survey of these potential issues.

Asbestos in structures was not covered in this report. It should be noted that an asbestos demolition survey will be required prior to any demolition of structures. If asbestos is present in soils, these will need to be dealt with in accordance with the Control of Asbestos Regulations (CAR) 2012.

The site plans enclosed in this report should not be scaled off. Any site boundary line depicted on plans does not imply legal ownership of land.

Any recommendations made in this report should be confirmed with the Regulatory Authorities prior to implementation to ensure compliance. Please note that whilst every effort has been made to pre-empt the likely requirements of the Local Authority, Environment Agency and warranty providers, they may have specific requirements that will need to be discussed and addressed at a later date.

Site specific limitations listed in section 4.2.

2.0 THE SITE

2.1 Location

The site is located off Chester Road, Gresford, Wrexham, LL12 8PW, centred on National Grid Reference 334403, 354204 as shown on the Site Location Plan, Drawing No. C6579/01.

2.2 Site Desciption

A site reconnaissance survey was carried out at the site on 26th February 2026. The main site features and potential issues identified are detailed below and are shown on the Site Features Plan, Drawing No. C6579/02.

Feature	Description
Site Area	Approximately 0.1 hectares.
Site Access	Access to the site is gained off Chester Road to the east.
Current Land Use and Site Features	The site is currently occupied by Colliers Park sports complex, with associated commercial buildings, hard standing car parks, storage compounds, and soft landscaped land. A number of manholes/drains are present at the surface. Street lights are present cross cutting the site east to west. A large shipping container is present towards the south of the site.
Potential Sources of Gross Contamination	No evidence of visual or olfactory contamination was noted.
Vegetation / Ecology	No vegetation was noted on site other than a small area of soft landscaping cross cutting the site from east to west.
Topography	The site is generally flat.
Site Boundaries	The site is bound by Colliers park sports complex, the sports complex is bound by mature trees and hedgerows to the north, east, south, and west.
Surrounding Area	The site is set within a mixed commercial and agricultural area, bordered by farmland to the north, east, and west, and a hotel/restaurant to the south.

2.3 Site History

Historical mapping and available environmental database information have been reviewed to establish previous land uses with the potential to have resulted in contamination.

The available mapping indicates that the site has historically remained within agricultural land before being developed as part of the Colliers Park training complex. No evidence has been identified of former heavy industrial processes, landfill, gasworks, chemical works or other potentially contaminative historical land uses within the application site itself.

The surrounding area has historically comprised agricultural land with scattered commercial development associated with the highway corridor. Consequently, the potential for significant historical contamination sources affecting the site is considered low.

2.4 Geological and Hydrogeological Setting

Published BGS mapping indicates the site is underlain by Glacial Sand and Gravel, in turn underlain by the Warwickshire Group siltstones/sandstones, although this was not encountered during the intrusive investigation due to the significant thickness of made ground.

The environmental search indicates a Secondary A Aquifer beneath the site and no Source Protection Zones affecting the development.

2.5 Environmental Setting

A review of the available environmental database information was undertaken to identify environmental constraints and potential contaminant sources that may influence the proposed development. The review included information relating to historical and current land use, environmentally sensitive receptors, pollution incidents, permitted activities and other environmental datasets, with the full Environmental Search Report provided in Appendix H.

The site is located within the existing Colliers Park sports complex and is surrounded predominantly by agricultural land, with isolated commercial development associated with the Chester Road corridor. The current site comprises buildings, hardstanding, landscaped areas and associated infrastructure. No significant industrial land uses or other potentially contaminative activities were identified within the application site from the available environmental information. The surrounding land use is not considered to present a significant risk to the proposed development.

The environmental database review identified no records of significant pollutant discharges to public sewer, no List I or List II dangerous substance discharges within 500m of the site, and only a single historical pollution incident located approximately 131m to the south. The recorded incident related to commercial waste in 2014 and was classified as having no impact to land and only a minor impact to air quality. Given its nature, distance from the site and recorded impact classification, this incident is not considered likely to have adversely affected the ground conditions beneath the site.

Overall, no significant environmental constraints were identified that would materially alter the scope of the intrusive investigation undertaken.

3.0 SUMMARY OF PREVIOUS REPORTS

A summary of the relevant points from the Geotechnical Letter Report completed by BSL (JL/C6579/15383) issues March 2026 is presented below:

- The client was looking to re-use a potential existing concrete slab and required further information, including slab thickness/geometry, reinforcement details, sub-base material, depth, and bearing strata geology.
- This slab was not encountered during the site works and therefore a standard programme of site investigation was undertaken.
- The site is generally underlain by deep granular made ground, encountered to the base of all exploratory holes to a maximum depth of 5.45m bgl.
- In situ plate load testing indicated equivalent CBR values ranging from 1.4% to 10.9%.
- Laboratory CBR results indicated CBR values ranging from 24.8% to 31.8%.
- Two PSD tests were undertaken on samples of the made ground and indicated it consisted of primarily granular material and varies between a silty sandy gravel and a silty very sandy gravel.
- Particle size distribution testing indicates that the samples generally fell within the grading limits for Class 1B and also within the limits for Classes 6F1/6F2 of the Specification for Highway Works (Series 601).
- Compaction testing carried out on samples of the made ground indicate Optimum Moisture Contents (OMC) of between 7.6% and 8.9%, with corresponding Maximum Dry Density (MDD) values between 2.02 Mg/m^3 and 2.10 Mg/m^3.
- Foundation recommendations were for pad foundations within the granular made ground, for which a minimum founding depth of 0.75m was suggested. An allowable bearing capacity not exceeding 130kN/m^2 should be assumed for pad footings of 1m width if it is deemed no groundwater is present.
- An allowable bearing capacity not exceeding 100kN/m^2 should be assumed for pad footings of 1m width if it is deemed groundwater is present.
- The most suitable foundations for the proposed structure at the site are likely to be pad foundations placed within the made ground sandy gravel strata The minimum founding depth in granular soils is typically 0.45m bgl. However, due to the more heterogeneous nature of the made ground across the site, and the higher nature of the provided structural loads, a more conservative minimum founding depth of 1.00m bgl has been adopted. Where footings are taken below the minimum founding depths, they should extend a minimum of 100mm into the specified bearing stratum. At this depth, for a pad footing of approximately 1.50m width and breadth, above the groundwater table, an allowable bearing capacity not exceeding 265kN/m2 should be assumed for the made ground sandy gravel. This adopts a factor of safety of 3 which should limit settlements to within acceptable limits. If subsequent groundwater monitoring determines that the groundwater table lies shallower than this depth, an allowable bearing capacity not exceeding 205kN/m2 should be assumed for the made ground sandy gravel. In this instance, the foundation would have to be deepened, or the pad width increased, to meet the required load capacity.
- For granular soils, a minimum ventilation void of 150mm should be provided below the underside of precast concrete suspended floors.

4.0 METHOD OF INVESTIGATION

4.1 Objectives

To confirm the risks to the identified receptors and confirm the ground conditions in respect to the identified geo-environmental risks, an appropriate intrusive investigation was undertaken, designed with consideration of the site history and the proposed development.

The aim of the fieldwork was to:

- Further investigate the ground conditions on site.
- Install standpipes to allow future gas and groundwater monitoring.
- Assess the potential contamination on the site and obtain samples for contamination screening.
- Assess the potential impact of any contamination on controlled waters.
- Obtain geotechnical information on the ground conditions at the site for preliminary foundation design and preliminary pavement design purposes.
- Give an assessment of the geo-environmental risks associated with redevelopment of the site.

4.2 Site Works

The following site works have been undertaken as part of the intrusive investigation on the 30th March 2026.

Method	No.	Range Depths (m bgl)	Purpose
Trial pits – JCB 3CX Mini excavator	2	0.20 – 0.50	Undertaken in order to facilitate plate load testing.
Plate load tests	2	0.15	Obtain CBR values for foundation/highways/pavement design.
Window sample boreholes – Tracked WS rig	3	4.60 – 5.00	Establish general ground conditions on site. Obtain samples for contamination testing. Installation of ground gas and water monitoring wells.
Infiltration tests (in Boreholes)	3	N/A	Obtain indicative infiltration rates for drainage design comprising 3no. falling head tests.

The approximate locations of the exploratory holes are indicated on the Exploratory Hole Location Plan, Drawing No C6579/02. The exploratory hole logs are presented in Appendix B.

The exploratory holes were logged by an experienced geo-environmental engineer in general accordance with the following guidance:

- BS 5930:2015+A1:2020 Code of Practice for Site Investigations.
- BS EN 14688-1:2018 Geotechnical Investigation and Testing – Identification and classification of soil.

4.3 Sampling Strategy

Representative samples were taken from exploratory holes at regular intervals to assist in the identification of the soils and to allow subsequent laboratory testing. They were stored and transported in general accordance with BS 10175:2026.

The type of sample was dependent upon the stratum and the purpose of analysis in accordance with current environmental guidance. The distribution of samples taken across the site is recorded on the exploratory logs.

Investigatory hole locations were determined by reference to the conditions identified in the preliminary risk assessment and previous ground investigation. An even spacing was used across the site. No specific sampling statistics or grid were utilised in this instance.

4.4 Laboratory Testing

As part of the initial assessment for potential contamination of the site, selected samples were taken for the purpose of chemical contamination testing.

In the absence of particularly contaminative processes on site and the lack of visual evidence of potential hydrocarbon impaction representative soil samples were screened for the following general suite of determinands at a UKAS approved laboratory:

Determinand	No of Samples
BSL Default Soil Suite: Arsenic, Cadmium, Chromium (III), Chromium (VI), Copper, Nickel, Mercury, Lead, Zinc, Selenium, speciated polycyclic hydrocarbons (PAH 16), water soluble sulphate (2:1 Extract), soil organic matter (SOM) and pH.	4
Petroleum Hydrocarbons (TPH CWG) inc BTEX and MTBE.	3
Asbestos Screen.	3
Waste Acceptance Criteria (WAC).	1

The Chemical Laboratory Testing Results are presented in Appendix D.

4.5 Monitoring

Ground gas and ground water monitoring standpipes were installed in a number of boreholes as detailed in the table further below.

A total of 4 monitoring visit has been undertaken out of 4 proposed as part of the current scope, in line with the recommendations of BS8485.

All gas monitoring was undertaken using either a GA5000 or GFM436 infrared gas meter with integral electronic flow analyser.

Flow measurements on each standpipe (l/hr) were taken. Measurements of the percentage volume in air (%v/v) of oxygen (O_2), carbon dioxide (CO_2) and methane (CH_4) were recorded in addition to the percentage Lower Explosive Limit (%LEL) of methane (Note: 100% LEL equates to 5% by volume), the atmospheric pressure (mb) and average temperature during the visit (°C).

Standpipes were constructed in general accordance with the relevant guidance. A summary of the installation construction is presented in the table below:

Location	Internal Diameter Pipe	Response Zone (m bgl)	Targeted Strata	Purpose
WS101	35mm PVC	1.00 – 5.00	Made Ground	Ground Gas & Groundwater
WS102	35mm PVC	1.00 – 4.60	Made Ground	Ground Gas & Groundwater
WS103	35mm PVC	1.00 – 5.00	Made Ground	Ground Gas & Groundwater

The gas monitoring visits recorded peak and steady state conditions. Peak results are those that occur on opening the valve on the borehole tap. Steady state conditions are those that occur a period of time afterwards when the initial (accumulated) gases have been purged from the borehole.

Ground gas monitoring results are presented in Appendix E of this report.

5.0 GROUND CONDITIONS

5.1 Summary

A brief summary of the ground conditions encountered by BSL during the two phases of ground investigation within is presented in the table below:

Stratum	Range Depths - Top (m bgl)	Range Depths - Base (m bgl)	Brief Description
Made Ground Topsoil	Ground Level	0.30 – 0.45	Sl gravelly clayey SAND.
General Made Ground	0.10 – 2.00	3.90 – 5.45	Sandy GRAVEL. Gravelly SAND.
Reworked Made Ground	0.30 – 2.70	2.50 – 5.45	Sandy GRAVEL. Gravelly SAND.

Details are provided in the logs in Appendix B and the individual strata are described in the sections below.

5.2 Made Ground

Made Ground Topsoil
Made Ground Topsoil was only recorded within WS03 and PL01 and comprised gravelly clayey sand with rootlets, and anthropogenic inclusions of gravel sized brick and pottery. This was encountered from ground level to between 0.30m and 0.45m bgl.

Hardstanding
Tarmacadam was recorded in WS01, WS02, WS04, WS101, WS102, WS103, PL01 and PL02 from between ground level and 0.45m to between 0.10m and 0.50m bgl.

General Made Ground
Granular made ground was found throughout all exploratory holes, from between 0.10m and 2.00m to between 3.90m and 5.45m bgl. The made ground was comprised predominantly of sand and gravel with varying amounts of clay, sand, and gravel as minor constituents, and rare anthropogenic inclusions of brick and concrete.

Cohesive made ground was observed within WS01, WS101, WS102, and WS103 from between 2.00m and 3.90m to between 2.50m and 4.40m bgl, with a maximum thickness of 0.60m, comprising predominantly slightly sandy gravelly clay with rare anthropogenic inclusions of brick.

Reworked Made Ground
Reworked made ground was encountered interbedded with the general made ground in WS02, WS03, WS04, WS101, WS102, and WS103 from between 0.30m and 2.70m bgl, to between 2.50m and 5.45m bgl, comprising predominantly sand and gravel with varying amounts of clay, sand, and gravel as minor constituents. It was noted that a large proportion of the gravel consisted of poor quality coal fragments.

5.3 Natural Superficial Strata

Natural Superficial Strata was not encountered in this investigation.

5.4 Solid Geology

The solid geology of the Salop Formation was not encountered in this investigation.

5.5 Groundwater

The depths to groundwater and locations present during site works are shown in the table below:

Location	Depth During Site Works (m)	Comments
WS01	NGW	
WS02	NGW	
WS03	1.20	Small seepage
WS04	NGW	
WS101	0.70	Small seepage
WS102	4.20	Small seepage
WS103	3.60	Small seepage

NGW – No Groundwater Encountered

Post site works monitoring has revealed the following depths to groundwater:

Location	Depth During Monitoring Period (range) (m)	
	Min	Max
Overall min/max	NGW	4.78
WS101	NGW	NGW
WS102	NGW	NGW
WS103	NGW	4.78

5.6 Observations

Contamination
During the works undertaken by BSL, observations for both visual and olfactory evidence of contamination were undertaken. No evidence of such contamination was observed at the site.

Stability of Excavations/Boreholes
The borehole sidewalls were generally stable and window sampling progressed without the need to install casing.

6.0 TEST RESULTS

6.1 In Situ Geotechnical Testing

Permeability Test Results (Boreholes)
The results of permeability testing in boreholes using falling head methods are presented in the table below. These were carried out in general accordance with BS 5930 & BS 22282.

Location	Response Zone (m)	Stratum Type	Hydraulic Conductivity (m/sec)
WS101	1.00 – 5.00	MADE GROUND	4.83×10^{-4}
WS102	1.00 – 4.60	MADE GROUND	1.05×10^{-3}
WS103	1.00 – 5.00	MADE GROUND	4.02×10^{-5}

The full test results are presented in Appendix C.

6.2 Aggressive Ground Conditions – Geotechnical Chemical Testing

The test results for the assessment of aggressive ground conditions are presented in Appendix D. The results are summarised and assessed within Section **Error! Reference source not found.** of this report.

6.3 Geo-Environmental Testing

Chemical Laboratory Testing
The chemical test results for soils, are presented in Appendix D. The results are summarised and assessed within Section 8.2 of this report.

Ground Gas Monitoring
Ground gas monitoring results are presented in Appendix E and are summarised and assessed within Section 8.7 of this report.

7.0 GEOTECHNICAL ASSESSMENT

The majority of the geotechnical information, including foundation design, is presented in the separately issued BSL Geotechnical Letter Report (JL/C6579/15383 Rev A) issued in March 2026.

The below points are pertinent additions to that document, relating to concrete classification and site drainage.

7.1 Ground Model

The site is currently occupied by Colliers Park sports complex, with associated commercial buildings, hard standing car parks, storage compounds, and soft landscaped land.

The ground conditions can be summarised as below (top down):

- General and reworked made ground generally comprising sand and gravel from ground level to a maximum of 5.45m bgl.
- Groundwater levels ranging between 0.70m and 4.20m bgl during site works.
- Post site works monitoring levels ranging between no groundwater encountered and 4.70m bgl.

7.2 Concrete Classification

The soluble sulphate and pH test results have been assessed in accordance with BRE Special Digest 1 "Concrete in aggressive ground" 2005. The Design Sulphate (DS) classification and the Aggressive Chemical Environment for Concrete (ACEC) classification are presented in the table below.

For the purposes of this assessment, the made ground is considered to be relatively permeable, therefore the groundwater has been classed as mobile.

Stratum	No. Samples	Characteristic SO_4 (g/l)	Characteristic pH	DS Class	ACEC Class
Made Ground	4	1890	7.4	DS-3	AC-3

Based on the above, the results of laboratory pH and sulphate content, indicate that sulphate class DS-3 and ACEC Class AC-3 conditions prevail in accordance with BRE Special Digest 1 "Concrete in aggressive ground" 2005.

The specific concrete mixes (the Design Concrete Class) to be used on site will be determined by the site-specific concrete requirements in terms of the durability and structural performance. These are assessed in terms of the Structural Performance Level (SPL) and any need for Additional Protective Measures (APM) detailed in Part D of BRE Special Digest 1 with further guidance in Pt E and F.

7.3 Site Drainage

The tests undertaken across the site indicate good drainage conditions. Based on the infiltration rates obtained, on the order of 10^{-5} m/s or greater, it is likely that drainage to soakaways will be feasible at the site. We recommend the design of soakaway drainage is carried out in accordance with BRE 365 and CIRIA C753. Consideration should also be given to future maintenance, where infiltration capacity can be reduced as a result of blinding through ingress of fines.

Note the base of any soakaway incorporated into the future development of the site is required to be at least 1m above the water table. Observed groundwater levels ranged between 0.70m and 4.20m bgl across

the site during site works. Post site works monitoring has ranged between no groundwater encountered and 4.80m bgl.

If drainage to soakaways is to be considered, it is suggested that this is discussed with the Local Authority at the earliest opportunity, to confirm the adequacy of proposed testing and to allow their inspection of any test results.

8.0 GEO-ENVIRONMENTAL RISK ASSESSMENT

8.1 Introduction

The samples were tested for an assessment of the chemical contamination that may pose a risk to human health. The results were examined with reference to a selection of guidance documents as detailed in Appendix A. In this case the LQM/CIEH S4ULs and DEFRA C4SLs for a commercial end use have been adopted as Tier 1 generic screening values.

Where samples record determinand concentrations that exceed the relevant screening values then these will be considered further.

A summary assessment sheet is presented in Appendix D alongside the chemical test results. Results are discussed in detail in the sections below.

8.2 Soils Test Results and Risk Assessment – Human Health

Metals
No metals have been detected above the adopted screening criteria.

Asbestos
No asbestos has been detected in any of the three samples screened.

Poly Aromatic Hydrocarbons (PAHs)
No PAHs have been detected above the adopted screening criteria.

Total Petroleum Hydrocarbons (TPH CWG)
No petroleum hydrocarbons have been identified above the adopted screening criteria.

BTEX and MTBE
No BTEX or MTBE compounds have been identified above the adopted screening criteria.

8.3 Summary – Human Health Risk Assessment

Based on the testing and assessment undertaken, no further action is required in respect to human health risks from soils contamination, based on the intended end use.

8.4 Soil Test Results – Controlled Waters

Soils
No significant contaminants were identified in soils as an indicator of potential impaction on groundwater.

8.5 Controlled Waters Risk Assessment

Groundwater/surface water testing has not been carried out based on the preliminary CSM risk assessment and the site is not considered to pose a significant risk to controlled water for the following reasons:

- No significant gross or mobile contamination has been identified on site in soils based on the results obtained as a potential indicator of groundwater contamination.
- There is no indication under present conditions of significant pollution of controlled waters and conditions following development of the site will not be any worse.
- For the made ground, the preparation of samples for leachability analysis has not been undertaken as this is an aggressive methodology and provides theoretical values which are unlikely to be

representative of existing site conditions, real site leaching concentrations will be reduced significantly from that indicated by the laboratory testing, furthermore this would not be representative of post construction conditions, which will significantly reduce infiltration.

- The concentrations of leachable substances that could emanate from the site will be subject to dilution and dispersal during transport and so the risks will reduce with distance from the site and into the identified surrounding water bodies.
- The nearest watercourse is over 600m away, which provides considerable distance for attenuation and contaminant degradation.
- The site does not lie within 500m of an SPZ.

8.6 Permanent Ground Gas and Vapours Results

A total of 4 ground gas monitoring visits have been carried out between the dates of 2nd April and 13th May 2026. The gas monitoring regime has now been completed and no further visits are scheduled. Results are summarised in the table below:

	CH_4 (%)		CO_2 (%)		O_2 (%)		CO (ppm)		H_2S (ppm)		Steady Flow (l/hr)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Peak	0.1	0.1	0.1	8.7	1.3	20.3	0.1	0.1	0.1	0.1	0.1	0.1
Steady	0.1	0.1	0.1	8.7	1.3	18.9					0.1	0.1

Notes: CH_4 = Methane; CO_2= Carbon dioxide; O_2= Oxygen; CO= Carbon Monoxide; H_2S= Hydrogen Sulphide; TVOC (PID)= Total Volatile Organic Compounds (as measured with Photo Ionisation Detector); ppm= Parts Per Million.

The highest carbon dioxide concentrations were recorded in WS101 (8.7% v/v) on the second monitoring visit. The maximum methane concentration recorded was below the detection limit, and therefore has assumed to be 0.1% v/v. The maximum peak and steady positive flow recorded was below the detection limit, and therefore has assumed to be 0.1l/hr.

The atmospheric pressure ranged between 991mb and 1013mb over the monitoring period, of which visits were conducted over a range of falling, steady and rising pressure trends.

It should be noted that the results from the first gas monitoring visit are considered anomalous due to the disparity in results when compared to the remainder of the visits. No evidence of elevated carbon dioxide or depleted oxygen were noted, whereas this was observed within all wells on all remaining visits. Therefore the results from the first visit should be considered with caution.

8.7 Ground Gas Risk Assessment

Basis of Assessment
In order to assess the ground gas situation and the requirement for ground gas precautionary measures at the site, guidance was taken from BS8485:2015+A1:2019 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' and CL:AIRE Technical Bulletin TB17 'Ground Gas Monitoring and 'Worst-Case' Conditions'.

As the site lies within a Coal Authority defined Coal Mining Reporting Area, a CON29M Coal Mining Search (ref. BRO-YZJ-TFG-6HC-SF9) issued May 2026, was reviewed in order to determine the level of risk from mine gas, this is presented within Appendix G. As the site has no mine entries within 50m, no workings at less than 150m depth, no faults or connecting pathways, and is outside the area of probable shallow coal workings, the site is considered to be within a negligible risk zone.

A review of the available historical mapping and environmental database information indicates that historical potentially contaminative land uses, including former refuse heaps, mining related features and

associated workings, were located predominantly to the west and south-west of the site and do not appear to encroach upon the site boundary. Whilst the Groundsure Enviro Insight report identifies a historical landfill record associated with Pont-y-Capel Lane, the corresponding mapped historical land use features are located offsite, and the referenced waste licence (WMBC L/45) is recorded approximately 180m south-west of the Site. Consequently, there is insufficient evidence to demonstrate that landfill materials are present beneath the site itself.

Ground gas monitoring undertaken as part of this investigation identified generally low and stable concentrations of landfill indicator gases. Methane concentrations were negligible throughout the monitoring period and no characteristic landfill gas regime was identified. A single isolated elevation in carbon dioxide concentration was recorded; however, this was not accompanied by elevated methane concentrations and is considered more likely to reflect natural biological processes within the soil profile than the influence of landfill derived gas. The monitoring results are therefore not consistent with the presence of significant landfill deposits beneath the site and indicate a low risk of ground gas generation from anthropogenic sources. On the basis of the historical review and the measured gas regime, the potential for landfill derived ground gas to affect the site is considered to be low.

Rationale and Suitability of Dataset
In accordance with BS8485 and as set out in Appendix A of this report, and as noted previously, the ground gas generation potential is considered to be **very low** (sources as made ground). The sensitivity of the development is **low** on account of the proposed commercial use.

In line with current guidance, it is recommended gas monitoring should comprise four visits over a one-month period. The required monitoring frequency has been met.

Although the first visit is considered to show anomalous results, as installations have been monitored under falling pressure on a number of occasions and what can be considered to be “worse case” conditions, the data set is considered to be suitable for assessment purposes and no further visits would be required – further visits would be unlikely to change the outcome of this assessment given the readings obtained under the conditions observed (as per CL:AIRE TB17 and BS8576).

Assessment of Data
Derivation of a Gas Screening Values (GSV) has been undertaken based on the guidance with BS8485 using the following equation: (max gas concentration / 100) x maximum steady flow.

A maximum steady flow of 0.1l/hr has been used to derive the worst credible GSVs. The GSV’s for the site are presented below.

Ground Gas	Adopted Typical Steady Flow Rate (l/hr)	Max Concentration (% v/v)	Worst Credible GSV (l/h)	Classification based on GSV	Typical Threshold Concentration Exceeded
Methane	0.1	0.1	0.0001	CS1	No – CS1
Carbon Dioxide	0.1	8.7	0.0087	CS1	Yes – CS2

The GSVs place the site the site into Characteristic Situation 1 (CS1), however due to concentrations of carbon dioxide greater than 5% v/v being recorded at the site then guidance states ***consideration*** should be given to increasing the site classification as part of assessment.

Based on the historical BGS mapping and the exploratory hole logs, the made ground encountered across the site is interpreted to comprise predominantly of gravel containing variable quantities of poor-quality coal. No evidence of putrescible or biodegradable material was identified during the intrusive investigation and, therefore, there is no indication of an active biogenic gas source associated with the site. Based on

the above, it is considered that the recorded ground gas concentrations are most likely attributable to low level residual coal degassing within the made ground.

While ground gas monitoring recorded elevated carbon dioxide concentrations, with a maximum recorded concentration of 8.7% v/v, no gas flow rates were recorded above the detection limit of 0.1l/hr during the monitoring programme. The absence of measurable flow indicates limited gas mobility and a low potential for significant ground gas migration beneath the proposed development.

In addition, the proposed development incorporates a suspended floor construction with a ventilated sub-floor void. The provision of a ventilated void beneath the building footprint will promote dilution and dispersal of any ground gases that may be generated within the underlying made ground, thereby substantially reducing the potential for gas accumulation beneath the proposed development.

Furthermore, the proposed development will incorporate radon protection measures. Whilst primarily intended for radon protection, the inclusion of a radon barrier and associated detailing will provide an inherent degree of carbon dioxide resistance, representing an additional level of gas protection beyond that typically associated with a Characteristic Situation 1 classification.

Assessment Summary
In summary, based on a lines of evidence approach, we consider that the site should be placed within CS1 classification and ground gas protection measures are not required within structures at the development, subject to agreement with the Local Authority, based on the following rationale:

- The available data set exceeds the minimum requirements suggested by the guidance for assessment.
- It is considered that the ground gas concentrations and flows have been monitored to enable a predication of “worst case” conditions; rapid and short pressure decreases are within the dataset.
- Based on the GSVs alone, the site falls into CS1 classification.
- The derived GSVs are considered to be highly conservative due to the interpreted artificial generation of gas flows.
- The typical threshold concentrations of 5% carbon dioxide have been exceeded on one occasion within WS101 during the spot monitoring data.
- The proposed suspended floor construction incorporates a ventilated sub-floor void, which will provide passive dilution and dispersal of any ground gases beneath the building footprint.
- Proposed radon protection measures will provide an inherent degree of additional gas resistance to the completed development.
- CL:AIRE Research Bulletin RB17 states the minimum level of ventilation required to deal with condensation is capable of dealing with quite onerous ground gas regimes. In addition, the requirements of Part L of the building regulations relating to the air tightness of buildings also leads to the need for a well-sealed floor slab (NHBC Foundation, 2009).
- Therefore, the structures on the development will also have an inherent level of ground gas protection, thus adding an additional layer of mitigation to the already low assessed level of risk.

8.8 Qualitative Risk Assessment

The CSM has been based on the findings of the site investigation and laboratory testing results and these are presented overleaf.

Human Health						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
On site Made Ground Metals, PAH's, Petroleum Hydrocarbons, asbestos	Root uptake, ingestion, direct contact, inhalation of dusts	End-users	Unlikely	Medium	Low	Historical BGS mapping indicates a substantial area of Made Ground associated with former colliery spoil tips along the south-western boundary of the site. In addition, Groundsure data identifies a historic landfill to the west and south-west of the site, with a licence issued in 1987 and last recorded inputs in 1988, listed as inert waste. These features are considered to represent potential sources of contamination, however laboratory analysis of soils undertaken as part of the Phase II investigation has not identified any exceedances of metals, PAHs, petroleum hydrocarbons, or asbestos above relevant Generic Assessment Criteria (GACs). Furthermore, the presence of hardstanding across the commercial development will break the pathway to site end users. Therefore the risk is assessed as low.
On site Made Ground Metals and organic contamination	Migration into/chemical attack of water supply pipelines	Water Pipelines / End users	Likely	Mild	Moderate/ Low	Contaminants within the soil/groundwater could potentially attack the clean potable water supply pipe, high characteristic SO_4 and low pH have been identified during chemical testing, contaminants should be assessed in accordance with the relevant guidance to determine the correct pipe material and level of precautions required. Whilst the longer chain hydrocarbons do not exceed human health limits from a commercial screening value perspective, they would exceed typical thresholds for PE pipe.
Made Ground Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	Unlikely	Medium	Low	As stated above a historical landfill was noted to be present offsite from approximately 1987 to 1988 which is considered to pose a potential gas risk. No significant elevations of methane, carbon monoxide or hydrogen sulphide were detected during the gas monitoring programme and there is not considered to be a credible risk of explosion, therefore the severity of the hazard is considered to be medium. Elevated concentrations of carbon dioxide and reduced oxygen levels were recorded, which may present a potential asphyxiation risk within confined spaces. However, measured gas flow rates were low, indicating limited gas mobility, and the proposed development incorporates a number of inherent gas protection measures, including radon protection measures and a ventilated sub-floor void, which will assist in the passive dilution and dispersal of any ground gases.

Human Health						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
						The ground gas risk assessment has characterised the site as Characteristic Situation 1 taking into account various lines of evidence including gas monitoring data. Mitigation will not be required and the risk is considered to be low.
Natural Geology Radon	Migration into confined spaces, inhalation	End-users	Likely	Medium	Moderate	BR 211 radon advice indicates full radon measures are required.

Controlled Waters						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
Onsite Made Ground PAH's, Metals	Overland flow, / migration through saturated zone	River Alyn 600m away (Surface waters)	Unlikely	Medium	Low	There are thick deposits of made ground on site, however no exceedances of any contaminants tested for have been identified. The nearest identified surface water receptor is the River Alyn, located approximately 600m from the site boundary. Based on the available information, it is considered unlikely that contaminants potentially associated with the made ground or historical industrial land uses would adversely impact the watercourse. This is due to the significant separation distance between the site and the river, together with the likelihood for attenuation, dilution, adsorption and natural degradation processes to reduce contaminant concentrations during any potential migration pathway. Accordingly, the pollutant linkage between the identified made ground and the River is considered to be incomplete, and therefore the risk posed to the watercourse is assessed as low.
	Leaching through unsaturated zone / Migration through saturated zone	Secondary A Aquifer (Ground-water)	Unlikely	Medium	Low	The site is currently surfaced in hardstanding and will remain so, with a new surface water drainage system installed which will further reduce the risk to controlled waters. By virtue of the development taking place, this should contribute to an overall "betterment" of groundwater quality.
	Migration through saturated zone	Principal Aquifer (Ground-water)	Unlikely	Medium	Low	The closest groundwater abstraction is over 600m SW of the site, there are no Source Protection Zones near the site. As stated above, the site is currently surfaced in hardstanding and will remain so, with a new surface water drainage system installed which will further reduce the risk to controlled waters.

8.9 Outline Remedial Measures

No sources of contamination have been identified on site, therefore no specific remedial measures are required for soils in respect to human health for the proposed end use.

Utilities
The level of protection for the clean potable water supply pipes should be determined using the local water company risk assessment criteria in accordance with UKWIR.

As the site is brownfield, there is the assumption that barrier pipe would be utilised, although requirements should be confirmed by risk assessment and with the water supply company.

Ground Gas Protection Systems
Based on the ground gas monitoring results and ground gas risk assessment, no mitigation measures are required.

Full radon protection measures are required for new buildings at this location.

As part of any enabling or remedial works, it is recommended that all boreholes with monitoring installations are decommissioned in line with EA guidance in order to remove preferential pathways for ground gas migration.

General
It is recommended that the approval of the Regulators (Local Authority /NHBC / Environment Agency) is obtained in regard to the above prior to any irrevocable action is taken at the site.

8.10 Health and Safety Issues

During the reclamation and construction phases of the site development it will be necessary to protect the health and safety of site personnel. The risk to construction and ground workers is assessed in the table below:

Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk
Made Ground (heavy metals, PAHs, petroleum hydrocarbons)	Ingestion, direct contact, inhalation of dusts.	Construction Workers	Unlikely	Mild	Very low
Asbestos	Ingestion, direct contact, inhalation of dusts.	Construction Workers	Unlikely	Medium	Low
Ground gas	Inhalation in confined spaces/trenches	Construction Workers	Low likelihood	Severe	Moderate

The risk from made ground will be mitigated by standard PPE including gloves. Welfare facilities should be made available to wash before hand to mouth activities.

It is noted that concentrations of carbon dioxide (an asphyxiant) in the soil exceed HSE Workplace Exposure Limits for personnel in the working environment of 1.5% for short term (15 minutes) exposure and/or 0.5% for long term exposure. Furthermore, soil concentrations of oxygen are below the HSE recommendations of 18%, noted to be as low as 1.3%.

Soil gas concentrations are not necessarily reflected by those in the breathing zone, all contractors and maintenance workers should be made aware of the possible presence of carbon dioxide and depleted oxygen and should take all necessary health and safety precautions when working in trenches or confined spaces.

General guidance on these matters is given in the Health and Safety Executive (HSE) document "Protection of Workers and the General Public during the Redevelopment of Contaminated Land". In summary, the following measures are suggested to provide a minimum level of protection:

- All ground workers should be issued with the relevant protective clothing, footwear and gloves. These protective items should not be removed from the site and personnel should be instructed as to why and how they are to be used.
- Good practices relating to personal hygiene should be adopted on the site.
- The contractor shall satisfy the Health and Safety Executive with regard to any other matters concerning the health, safety and welfare of persons on the site.

9.0 WASTE SOIL CLASSIFICATION & ASSESSMENT

9.1 Summary

BSL have undertaken a preliminary assessment of potential excavation waste to arise from the site during redevelopment to:

- Classify the excavation waste to arise as either hazardous or non-hazardous.
- Identify the most sustainable options for the wastes to arise in accordance with the waste hierarchy.
- Provide a written description of the waste required as part of the Duty of Care.
- Provide details of "hazardous properties" to complete hazardous waste consignment note (where applicable).
- Be able to provide a basic classification report to a landfill operator (where waste is destined for landfill disposal).

It should be noted that testing requirements for contaminated land risk assessment differ to those for waste classification purposes. Unless otherwise stated, the assessment in this section has been carried out to provide initial indications in respect to disposal of waste soils, however this may not be fully compliant with waste testing requirements or frequencies, with further testing potentially required.

9.2 Soils Waste Classification Procedure

As described in the 'Waste Duty of Care Code of Practice (2016)' any substance or object that the holder discards, intends to discard or is required to discard is a waste. It is the responsibility of the waste producer to classify this waste. The classification process is described in the 'Guidance on the classification and assessment of waste' WM3 and aims to determine whether the waste is Hazardous or Non-Hazardous to human health and the environment.

Waste classification should be based on soils analyses that are representative of the actual waste load. At the stage of ground investigation, the materials that will become waste have generally not been defined yet, however test data can provide a useful guide to the likely waste classification before it is generated.

Further guidance is provided in Appendix A.

The Landfill Directive (Directive 1999/31/EC on the landfilling of waste, Decision 2003/33/EC and Landfill Regulations 2005) led to the establishment of a methodology for classifying wastes. Wastes first need to be classified based on their total concentrations and classified as either hazardous or non-hazardous waste. WAC testing is only required if the end disposal route is a landfill and WAC analysis must not be used for waste classification.

Wastes can only be accepted at a landfill if they meet the relevant Waste Acceptance Criteria (WAC) for that type of landfill. A waste must comply with the WAC limits for the relevant landfill, otherwise the soil will need to be pre-treated. There are three different WAC criteria, these are:

- Inert waste.
- Stable Non-Reactive Hazardous Waste (SNRHW).
- Hazardous waste.

Details of how material should be classified for waste disposal are presented in the BSL Methodology and Guidance in Appendix A and are summarised in the table below:

	PRIOR TO LEAVING SITE			
Classification based on Total Concentrations[1]	**Non-Hazardous Waste**		**Hazardous Waste**	
	IF SOILS CANNOT BE RE-USED ELSEWHERE AND MUST GO TO LANDFILL			
WAC testing	Below inert WAC limit values	Above inert WAC limit values	Below hazardous WAC limit values[4]	> WAC limit values
Landfill requirements	INERT landfill	NON-HAZARDOUS landfill[2]	HAZARDOUS landfill	PRE-TREATMENT[3]

1 Total concentrations are defined as tests results on solids as opposed to leachate (i.e. a liquid).
2 Individual sites may have certain limit values pre-determined in their licence.
3 After pre-treatment the material characteristics may have changed to an extent that allow the soil to be re-classified.
4 Possibility that wastes could be classified as stable Nonreactive HAZARDOUS waste in non-hazardous Landfill (e.g. soils containing low concentrations of asbestos, gypsum or sulphate bearing soils).

Inert Waste
The possibility of automatic inert classification of the naturally occurring "clean" soils should be explored in accordance with Section 4.3 of the EA guidance document. See Appendix A for further guidance.

9.3 Waste Classification and Waste Acceptance Criteria (WAC)

We have reviewed the testing results and assessed them through a waste classification database (HazwasteOnline™) which allows users to code and classify waste as defined in the EWC (European Waste Catalogue) based on EC Regulation 1272/2008 on the Classification, Labelling and Packaging of Substances and Mixtures (CLP) and latest Environment Agency guidance (WM3 "Guidance on the classification and assessment of waste -Technical Guidance").

The samples tested were screened against assessment criteria within WM3 using the HazWasteOnline tool to assess whether they contained any contaminants in the hazardous range.

The Waste Classification Report and WAC testing results are presented in Appendix F. Locations of hazardous soils are presented in the table below, alongside the WAC analysis test results.

Location	Depth (m)	Stratum	Waste Classification	WAC Analysis	Landfill	Comments
WS103	0.1 – 0.6	MADE GROUND	Hazardous	Mineral Oil	Stable Non-reactive Hazardous waste in non-hazardous Landfill	HP7, HP11

Based on the waste classification database assessment, the majority of the made ground soils have been classified as **non-hazardous,** however the made ground soils associated with the shallow gravel in WS103 have been classified as **hazardous.**

Note that further testing of the soils (WAC testing) may be required on the actual arisings in order to satisfactorily categorise the soil for its suitability for disposal to landfill.

Waste Containing Asbestos
Should soils contain asbestos, the concentration and type of asbestos identified, in addition to the chemical composition (i.e. hazardous or non-hazardous detailed above), will determine which waste code is applicable to the soils and which landfill will accept it as summarised below:

Waste	Conc. by Weight (%)	EWC 2002 Catalogue Entry Code	Waste Disposal Route
Non-hazardous containing asbestos fibres	<0.001 - <0.1%	17 05 04 (soil and stones other than those mentioned in 17 05 03*)	Non-hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a stable non-reactive hazardous landfill site.

Waste	Conc. by Weight (%)	EWC 2002 Catalogue Entry Code	Waste Disposal Route
Hazardous containing asbestos fibres	<0.001 - <0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a hazardous landfill site.
Non-hazardous soils containing asbestos fibres	<0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill authorised to receive asbestos, or in a stable non-reactive hazardous waste cell at a non-hazardous landfill authorised to receive asbestos.
Non-hazardous Soils containing ACM (Mechanically separable)	>0.1%	17 06 05 (construction material containing asbestos) 17 05 04 (soil and stones other than those mentioned in 17 05 03*)	ACMs disposed of at a hazardous landfill authorised to receive asbestos, or in a stable non-reactive hazardous waste cell at a non-hazardous landfill authorised to receive asbestos. Soils should be disposed of at a non-hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a stable non-reactive hazardous landfill site.
Hazardous soils containing ACM	>0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a hazardous landfill site.

General

Following the classification of waste materials, the options available for the waste can be considered in the context of the waste hierarchy as below:

- Onsite re-use (with or without prior treatment) under suitable exceptions/permits.
- Offsite processing for recycling or recovery e.g. screening.
- Offsite disposal (with or without prior treatment) i.e. landfill.

Where feasible, efforts should be made to retain soils for onsite re-use to minimise costs and maximise the sustainability of projects.

If any gross hydrocarbon contaminated material is encountered during the construction phase, it is possible that this may be classified as hazardous and testing should be undertaken at that time.

Where it is necessary to dispose material off site it is recommended that materials are segregated and sufficient time is allowed to further classify the actual soil arisings that constitute the waste, including discussion with landfill sites and waste transfer stations to find the best disposal route. It is illegal to dilute and mix soils without a suitable permit.

Where possible, the option that the soils could be recycled at a suitable local waste treatment plant or transfer station rather than a landfill disposal route should be explored.

9.4 Re-use of Soils

By definition in law, any material excavated from the ground becomes waste at the moment of excavation. If that soil (now a “waste”) is then placed on another part of the development site (or used on another development site) without an appropriate materials management plan, permit or exemption being in place, by law this material is defined as “illegally deposited waste”.

In order to comply with UK legislation and avoid excessive costs, if the re-use of soils is proposed on site, this should be done in accordance with the relevant exemptions or permits in place.

Soils Re-use Under DoWCoP

One of the main industry mechanisms for allowing the re-use of soils in construction is the CL:AIRE "Development Industry Code of Practice for the Definition of Waste" (CL:AIRE DoWCoP) also known as a Materials Management Plan (MMP). Further guidance is provided in the BSL Methodology and Guidance in Appendix A.

In order to re-use soils under the DoWCoP, there are four key criteria that need to be met:

- The aims and objectives of the project meet the requirements of the Waste Framework Directive (does not harm human health or the environment).
- The soils can be demonstrated to be suitable for use (backed up by chemical/geotechnical testing and assessment).
- There is certainty of use (planning consents are in place alongside materials tracking, which should be in place as part of good site practice in any case).
- Quantity (the quantity of materials used should be known).

Information on existing site levels, proposed levels, volumes generated (e.g. foundation / drainage excavation arisings) would need to be known in order to complete the MMP.

If the DoWCoP is the chosen route, the MMP should be in place and declared by a Qualified Persons (QP) before works commence, otherwise excavated soils could constitute an illegal deposit of waste and enforcement action could be taken by the EA and HMRC.

Once the project is complete, a verification report detailing soils re-use/import will need to be produced and submitted to CL:AIRE, which may be subject to a random audit process. Sites found to be non-complaint with the CoP can be referred to the EA for further investigation.

Note that for re-use of landfilled materials or mining wastes, the DoWCoP may not apply and a Waste Recovery Permit (or others) may be required. Liaison with the Environment Agency would be needed on a case by case basis to determine the best option.

Re-use of soils containing asbestos should comply with the CL:AIRE publication 'Interpretation for Managing and working with Asbestos in Soil and Construction and Demolition Materials' (CAR-SOIL™) and CAR 2012.

In terms of the re-use of brick/concrete crush materials, the DoWCoP does cover aggregates, but only on the site of origin, and the EA WRAP aggregate Quality Protocol might best apply to ensure quality standards, which are discussed further below.

Soils Re-use under Exemptions and Permits

Other potentially suitable re-use mechanisms may include U1 Exemptions, WRAP quality protocols (for aggregates) or Waste Framework Directive (WFD) Exclusions, amongst other mechanisms. Further details are provided in Appendix A.

10.0 CONCLUSIONS

10.1 Geo-Environmental

Geo-Environmental – Human Health – Soils
Testing of the made ground at the site did not reveal any exceedances of heavy metals, PAHs, petroleum hydrocarbons, BTEX or MTBE compounds.

Based on the testing and assessment undertaken, no further action is required in respect to human health risks from soils contamination, based on the intended end use.

Geo-Environmental – Ground Gases and Vapours
Ground gas monitoring has revealed a maximum peak carbon dioxide concentration of 8.7%v/v and methane concentrations of 0.1%v/v. Based on the gas monitoring and assessment the site is classified as Characteristic Situation 1 and ground gas protection measures are not required.

Full radon protection measures are required for new buildings at this location.

Geo-Environmental – Controlled Waters
The overall risk to controlled waters is considered to be low and no further action is required.

Waste
Waste classification for the made ground at the site has revealed the majority of the soils to be non-hazardous. However, one of the samples tested for identification (WS103) confirmed an exceedance of mineral oils resulting in a hazardous classification, therefore being determined as unsuitable for 'Inert Waste Landfill'.

10.2 Geotechnical

Concrete classification
Sulphate class DS-3 and ACEC Class AC-3 conditions prevail.

Drainage (SuDS)
Based on the infiltration rates obtained, on the order of 10^{-5} m/s or greater, it is likely that drainage to soakaways will be feasible at the site.

10.3 Further Work

The following further work is considered necessary to progress the site to construction phase:

- Detailed foundation design by a structural engineer.
- Production of Ground Gas Protection Measures Verification Plan for radon protection.
- Production of Materials Management Plan (MMP) under the CL:AIRE DoWCoP, if required.

11.0 ABBREVIATIONS AND DEFINITIONS

GLOSSARY	
Term / Abbreviation	**Definition**
AST	Above Ground Storage Tank.
B(a)P	Benzo (a) Pyrene.
BGS	British Geological Survey.
BRE	Building Research Establishment.
BS	British Standard.
BSL	Brownfield Solutions Ltd.
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes.
CBR	California Bearing Ratio (used in pavement/highways design).
CAR 2012	Control of Asbestos Regulations (2012).
CBCB	Cheshire Brine Compensation Board.
CBCD	Cheshire Brine Compensation District.
CBR	California Bearing Ratio.
CIEH	Chartered Institute of Environmental Health.
CIRIA	Construction Industry Research Association.
CL:AIRE	Contaminated Land: Applications in Real Environments.
CLEA	Contaminated Land Exposure Assessment.
CLO	Contaminated Land Officer.
COMAH	Control of Major Accident Hazards.
Contamination	Presence of a substance which is in, on or under land, and which has the potential to cause significant harm or to cause significant pollution of controlled water. There is no assumption in this definition that harm results from the presence of the contamination. Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. Contamination may relate to soils, surface water, groundwater or ground gas.
Controlled Waters	Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three-mile limit of territorial waters.
CPT	Cone Penetration Test.
CSM	Conceptual Site Model. A schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the basis of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of intrusive investigations can provide additional data that can be used to further refine the conceptual site model.
DCP	Dynamic Cone Penetrometer.
DNAPL	Dense Non-Aqueous Phase Liquid.
DoWCoP	Definition of Waste Code of Practice.
DWS	Drinking Water Standard.
EA	Environment Agency.
EHO	Environmental Health Officer.
EQS	Environmental Quality Standard.
GAC	Generic Assessment Criteria.
GDR	Geotechnical Design Report.

GLOSSARY	
Term / Abbreviation	**Definition**
GFR	Geotechnical Feedback Report.
GIR	Ground Investigation Report.
GSV	Gas Screening Value.
Harm	Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case of human health, including property/structures and water supply pipelines.
Hazard	Inherently dangerous quality of a substance, procedure or event.
HDPE	High Density Polyethylene.
HSV	Hand Shear Vane.
K	Modulus of Subgrade Reaction.
LCRM	Land Contamination: Risk Management (EA guidance).
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene).
LOD	Limit of Detection (for particular method adopted).
MMP	Materials Management Plan.
Mv	Modulus of Volume of Compressibility.
ND	Not Detected.
NHBC	National House Building Council.
NR	Not Recorded.
OS	Ordnance Survey.
PAH	Polycyclic Aromatic Hydrocarbon.
Pathway	Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.
PCB	Poly-Chlorinated Biphenyl.
PCSM	Preliminary Conceptual Site Model.
pH	Scale used to specify how acidic or basic a water-based solution is.
PHC	Petroleum Hydrocarbons.
PID	Photo Ionisation Detector.
PNEC	Predicted No-Effect Concentration.
Precision	Level of agreement within a series of measurements of a parameter.
PSD	Particle Size Distribution.
PVC	Polyvinyl Chloride.
Receptor	Human health, living organisms, ecological systems, controlled waters (surface waters and groundwater within aquifers), atmosphere, structures and utilities that could potentially be adversely affected by contaminant(s).
Risk	Probability of the occurrence, magnitude and consequences of an unwanted adverse effect on a receptor.
Risk Assessment	Process of establishing, to the extent possible, the existence, nature and significance of risk.
Sampling	Methods and techniques used to obtain a representative sample of the material under investigation.
SOM	Soil Organic Matter.
Source	Location from which contamination is, or was, derived. This could possibly be the location of the highest soil, groundwater or gas concentration of the contaminant(s).
SPT	Standard Penetration Test.
SVOCs	Semi Volatile Organic Compounds.
TOC	Total Organic Carbon.
TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group).
TVOCs	Total volatile organic compounds.

GLOSSARY	
Term / Abbreviation	**Definition**
UCS	Unconfined Compressive Strength.
Uncertainty	Parameter, associated with the result of a measurement that characterises the dispersion of the values that could reasonably be attributed to the measurement.
UST	Underground Storage Tank.
UXO	Unexploded Ordnance.
VCCs	Vibro Concrete Columns.
VSCs	Vibro Stone Columns
VOCs	Volatile Organic Compounds.
WAC	Waste Assessment Criteria.
WFD (in waste context)	Waste Framework Directive.
WFD (in water context)	Water Framework Directive.
Units	**Definition**
°	Degrees
Φ	Phi angle (in degrees)
g/l	Grams per Litre
Km	Kilometres
kPa	Kilo Pascal (Equivalent to kN/m^2)
$KN/m^2/mm$	Kilo Newton per metered squared per millimeter
kN/m^2	Kilo Newtons per metre squared
kPa	Kilo Pascal (Equivalent to kN/m^2)
l/hr	Litres per hour
MJ/kg	Mega joule per kilogram
MN	Mega Newton
M^2/MN	Mega Newton per metre squared
M	Metres
m bgl	Metres Below Ground Level
m OD	Metres Ordnance Datum (sea level)
µg/l	Micrograms per Litre (parts per billion)
µm	Micrometre
mb	Millibars (atmospheric pressure)
mg/kg	Milligrams per kilogram (parts per million)
mg/m^3	Milligram per metre cubed
mm	Millimetre
ppb	Parts Per Billion
Ppm	Parts Per Million

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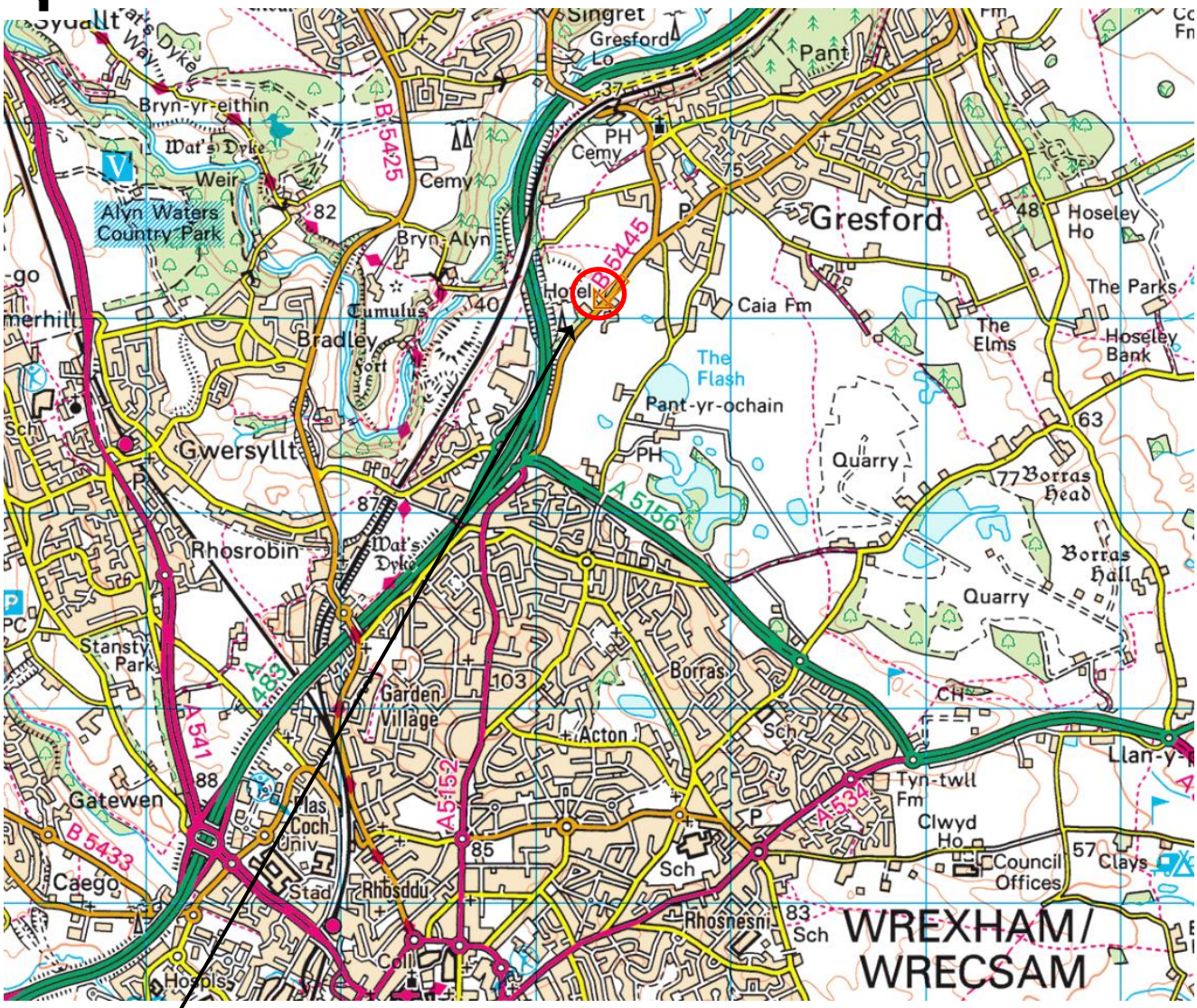
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DRAWINGS



SITE LOCATION

NEAREST POSTCODE: LL12 8PW

SITE ENTRANCE. WHAT THREE WORDS /// marble.extra.deflection



REV	DATE	DESCRIPTION	BY	CKD

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PROJECT TITLE
WREXHAM FC TRAINING GROUND

DRAWING TITLE
SITE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C6579/01	-	NTS	24/02/26

DRAWN BY	CHECKED BY
MO	JM



KEY

PROPOSED OUTLINE 1

PROPOSED OUTLINE 2

WINDOW SAMPLE BOREHOLE
WSXX

PLATE LOAD TEST
PLXX

NOTES

1. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING WORKS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT & ENGINEER FOR VERIFICATION. FIGURED DIMENSIONS ONLY ARE TO BE TAKEN FROM THIS DRAWING.
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WREXHAM FC TRAINING GROUND

DRAWING TITLE
EXPLORATORY HOLE PLAN

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C6579/02	A	NTS	12/03/26

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JL	JM



KEY

- PROPOSED OUTLINE 1
- PROPOSED OUTLINE 2
- ELECTRICAL SERVICE
- DRAIN COVER
- UNDERGOUND DRAINAGE
- SHIPPING CONTAINER

NOTES

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PROJECT TITLE
WREXHAM FC TRAINING GROUND

DRAWING TITLE
SITE FEATURES PLAN

DRAWING No.	REVISION	SCALE	DATE
C6579/03	-	NTS	07/04/26

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JL	JM

APPENDIX A

BSL Methodology and Guidance

BSL Phase II Geo-Environmental Assessment Reports - Methodology and Guidance

Background

This Appendix provides information on the approaches, methods and guidance used by Brownfield Solutions Ltd in the preparation of this report.

The term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential soils and groundwater contamination). The term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements). It should be noted that this is an integrated investigation and these two main aspects are related, unless otherwise specified within the report.

The Phase II stage is the Ground Investigation, Generic Risk Assessment and Geotechnical Interpretation. This represents the further assessment mentioned above. The Ground Investigation comprises field work and laboratory testing based on the findings of the Preliminary Risk Assessment, if undertaken, to reduce uncertainty in the geotechnical and geo-environmental hazard identification. This may include an exploratory, a detailed or/and supplementary Investigations as described in BS 10175:2011+A2:2017. Phase II Assessments are produced in general accordance with the recommendations for a Tier 2 Generic Quantitative Risk Assessment as described in LCRM guidance and are also intended to fulfil the requirements of a Ground Investigation Report (GIR) as detailed in BS EN 1997-2:2007.

Contaminated Land - Legislative Background

Land contamination can be addressed in several ways, e.g. during planning, under Part 2A, following an incident, during an investigation into environmental damages, or during the application of an environmental permit, or its surrender.

For the planning process the key test is **as a minimum the site cannot be determined as contaminated land**, e.g. there is not significant harm, significant possibility of significant harm to human health or that there is not significant harm to, or the significant possibility that the pollution of controlled waters will occur.

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act.
- The Contaminated Land Statutory Guidance, DEFRA – April 2012.
- The Contaminated Land (England) Regulations 2006.
- The Contaminated Land (England) Amendment Regulations 2012.
- Water Resources Act.
- Water Framework Directive.
- Environmental Damage Regulations.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM) 2019.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

1) Significant harm is being caused or there is a significant possibility of such harm being caused.
2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

Source - substances that are potential contaminants or pollutants that may cause harm.
Pathway - a potential route by which contaminants can move from the source to the receptor, and the impact of that migration on the source e.g. attenuation.
Receptor - a receptor that may be harmed, for example the water environment, humans and water, considering the sensitivity of the receptor.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused.



Where any one of the “pollution linkages” between the above is absent there is deemed to be no risk.

The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the S-P-R approach is ‘suitable for use’ criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

Relevant Guidance Documents
This report has been prepared in accordance with the list of guidance below, however the list is not exhaustive:

- DETR: Circular 02/2000: Environmental Protection Act 1990: Part IIA: Contaminated land. 2012.
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002.
- BS 10175:2011+A2:2017.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM). 2019.
- Groundwater Protection https://www.gov.uk/government/collections/groundwater-protection
- UK Technical Advisory Group (UKTAG) - Water Framework Directive
- Incidents and their classification: the Common Incident Classification Scheme (CICS) – Used by the Environment Agency to classify pollution incidents.

Relevant Legislative Documents
The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012).
- The Environment Protection Act (1990).
- The Water Resources Act (1991).
- The Environment Act (1995).
- The Contaminated Land (England) Act (2000).
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- Contaminated Land (England) Regulations (2012).
- The Environmental Damage (Prevention and Remediation) Regulations (2009).
- Environmental Permitting Regulations (England and Wales) Regulations (2010).
- The Water Environment (Water Framework Directive) (England and Wales) Regulations (2017).
- Health and Safety at Work Act.
- National Planning Policy Framework (NPPF) – latest version.

Contaminated Land Risk Assessment Approach

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:



LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under LCRM, three tiers of risk assessment exist – Stage/Tier Preliminary Risk Assessment, Stage 2 Generic Quantitative and Stage 3 Detailed Quantitative.

Further information can be found at the below site:
https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552, with reference to Incidents and their classification: the Common Incident Classification Scheme (CICS), Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance 2012 and other guidance as appropriate which will be detailed within the main body of the report if applied.

The likelihood of a given receptor being impacted is related to a number of factors, e.g. the geology which could inhibit contaminant migration. For example, a site with a significant thickness of clay between it and a receptor may reduce migration of contamination via the subsurface, which will reduce the likelihood of a given receptor being impacted. The geology or drainage for example could offer a preferential pathway e.g. mines shafts/faults increasing the likelihood and potential magnitude of an impact. The depth of contamination will also affect the exposure pathway, for example petroleum hydrocarbons at depth are unlikely to reach a receptor via dermal contact but could via vapour pathways which will influence the likelihood of an impact being felt e.g. if there are no buildings on site.

The terms and definitions used for the assessment of the likelihood are provided below:

High likelihood: There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Examples - Extensive areas with concentrations above saturation limits for mobile contamination e.g. petroleum hydrocarbons within the water table.

Likely: There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term.
Examples – Localised areas of contaminants with concentrations above saturation limits for mobile contamination e.g. localised petroleum hydrocarbons within the water table; shallow contamination above relevant human health generic assessment criteria is present with little or no hardstanding,

Low likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term.
Examples - A thickness/distance of low permeability deposits preventing contaminant migration to a receptor is present; a site is mostly covered hard standing preventing exposure to soil contamination.

Unlikely: There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.
Examples – A site is underlain by a substantial thickness of low permeability clays, between the source and potential receptors which will inhibit significantly, but not completely rule out migration to sensitive receptors.

The severity is also classified using a system based on CIRIA C552, with reference to Incidents and their classification: the Common Incident Classification Scheme (CICS), Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance 2012 and other guidance as appropriate which will be detailed within the main body of the report, if applied. The terms and definitions are:

Severe: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);

Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse.

Medium: Chronic damage to human health ('significant harm' as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve.

Mild: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures, services or the environment.
Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.

Minor: harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.
Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low
	Negligible	Negligible Risk / No Linkage			

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

Very high: There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required.

High: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term.

Moderate: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term.

Low: It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.

Very Low: There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Some linkages may be identified which constitutes a theoretical connection between a source and a receptor, but professional judgement shows them not to be possible for some reason. These are labelled 'negligible risk' and 'no linkage' in the summary table, which give rise to an overall **negligible** risk category and no further action is required.

Contaminated Land Screening Values

In assessing the potential for contamination Brownfield Solutions Limited (BSL) follows UK guidance and current best practice.

General
The purpose of using generic Tier 1 screening levels is to have a simple means of assessing the potential contamination of a site and to inform decisions on whether further investigation is warranted or whether an option to undertake remedial action based on the data to hand is cost effective.

Human Health
Current UK guidance on risks to human health is provided by DEFRA and the Environment Agency (EA). Under the land use planning system where the aim is to demonstrate 'suitability for use' the key will usually be to confidently determine that the level of contamination of the land is low relative to some appropriate measure of risk at a particular critical connection.

Publications forming part of the guidance include the CLEA Model and toxicological reports collectively referred to as the CLEA Guidance. The CLEA Guidance has included a number of publications which have provided initial screening values or Generic Assessment Criteria (GACs) for soils contamination based on standard land uses and soil assumptions. The critical concentrations referred to above can be the relevant GAC.

CLEA guidance has gone through a number of revisions over time. Tier 1 generic S4UL values (or GACs) have been published using the CLEA 1.06 Model by CIEH/LQM. These are the third set of generic assessment criteria generated by CIEH and replace the previous two sets of GACs. The revised S4UL values are based on greater knowledge of relevant toxicology and further consideration of exposure frequencies.

C4SL values for six determinands including lead were published by DEFRA/CL:AIRE in December 2014. Additional determinands were added in 2021. They represent a low risk as opposed to minimal risk, however they are still strongly precautionary. These screening values were published by DEFRA for Part 2A use, although DEFRA have also confirmed acceptability for use under planning. However, S4ULs remain the first reference point for BSL due to the broader range of end uses scenarios and the availability of a wide array of determinands with various soil organic contents.

As part of Tier 1 assessments, the following data sources are used in the order of preference given below, unless further justification is provided to adopt less conservative criteria:

- CIEH S4UL values (derived by CIEH/LQM).
- DEFRA/CL:AIRE C4SL's https://www.claire.co.uk/projects-and-initiatives/category-4-screening-levels
- CL:AIRE GAC values.
- Guidance from other European countries.
- Guidance from the outside Europe.

Dependent on requirements, test results may be divided into representative data sets for assessment against the above referenced screening criteria, based on the conceptual model and taking into account such characteristics as variation in soil properties, historical, existing or proposed land uses. The soils in these areas are considered likely to form the ground cover in critical receptor areas (e.g. gardens, soft landscaping etc)

where pathways may exist. The critical part of the soil column is typically taken as the upper metre in terms of contact with end users of a development site for the purposes of initial assessment.

The screening criteria adopted by BSL are presented overleaf.

Further Assessment
When screening values are exceeded then further consideration is required. This could include further additional detailed investigation and assessment to further define the risk or to design appropriate remedial measures to either remove the source or break the pathway. In some cases, dependant on the Conceptual Site Model (CSM), no action may be required.

PAHs and B(a)P as a Surrogate Marker for Adoption of C4SLs
As stated above, S4ULs remain the first reference point as screening levels unless further justification is provided. In order to determine if the C4SL can be adopted, benzo(a)pyrene (B(a)P), the following guidance within SP1010 Appendix E for B(a)P and Public Heath England (PHE) may be adopted with our assessments where appropriate.

Guidance states that benzo(a)pyrene is considered to be one of the most potent PAHs, and it would be appropriate to assume the cancer risk in a mixture is proportional to the concentration of a surrogate marker PAH (benzo(a)pyrene) in the mixture. The ratio of PAHs within the mixture can be assessed to ensure that the profile is similar to that seen for the test material (coal tar mixtures) in the toxicological study by Culp et al. The International Programme on Chemical Safety (IPCS) considered that the PAH profile of the soil sample may deviate from the average profile by about an order of magnitude (up or down).

A more recent study by Bull et al (2013) which analysed PAH concentrations in soil samples from 274 sites, showed that the levels of PAH relative to B(a)P showed little variability and were similar to that recorded for the coal tar mix used in the Culp et al study. Given this, it was concluded that benzo(a)pyrene is a suitable surrogate marker to represent mixtures of PAH in soil.

In order to risk assess the PAH mixture for site specific soil samples using human health guideline values, notably the C4SLs, as detailed in SP10101 the ratio of the seven genotoxic PAHs as shown below, relative to B(a)P, should be calculated to ensure it is similar to the test material used in the Culp study (PHE 2010). To be considered sufficiently similar, the ratio relative to B(a)P should fit within the upper and lower limits (representing an order of magnitude above and below the mean ratio to B(a)P of test material used in the Culp et al study). In such cases B(a)P is considered an adequate surrogate marker and the Low Level of Toxicological concern (LLTC) for B(a)P (i.e., the C4SL) may be used in the risk assessment.

Statistical Analysis on Soils
Guidance on the use of statistics is taken from the CL:AIRE publication "Comparing Soil Contamination Data with a Critical Concentration" 2020, the basis of which in statistics is termed Central Limit Theorem (CLT), which says "*The distribution of sample means converges to a normal distribution as the sample size increases*".

If the critical concentrations have been exceeded, as part of a further assessment, statistical analysis may be undertaken on a dataset to demonstrate that the mean concentration on the site (or a particular area) is actually below the critical concentration. The true mean concentration of a contaminant is never known because all the site soil has not been tested. An estimation of the true mean can be obtained from the samples tested during the investigation. The greater the number of samples tested, the closer the mean of these values is to the true mean.

As discussed above, test results are typically divided into representative data sets for assessment and may be referred to as 'averaging areas' to which statistics can be applied, although several statements need to be satisfied before applying the guidance:

- Averaging areas have been defined based on the CSM.
- Sample locations – random/grid sampling adopted as opposed to targeted investigation.
- Samples are evenly spread and not clustered.

- Analysis do not suggest a hotspot/outlier or cluster established by histogram or other means.
- Samples are of same/similar depth and taken from one population (e.g. just topsoil).
- Analyses do not show a spatial trend or other spatial pattern across that zone.
- The number of samples has been shown to be sufficient for statistical analysis.

Once the above have been satisfied, when undertaking statistical analysis, the question "*are mean soil concentrations within the averaging area equal to, or greater than, the GAC*?" is being asked. Typically, outliers or "hotspots" are treated as separate zones or averaging areas. The sampling strategy and assessment should also take into account uncertainty (for example, spatial heterogeneity) in contaminant concentrations. There is the assumption that sampling was random or stratified and systematic (e.g. on a grid) and not targeted at specific sources; data from such targeted areas should be omitted from the statistical analysis. Data should be from one population (i.e. the same materials).

The statistical test that is carried out is used to demonstrate that there is a certain probability that the true mean falls below the critical concentration (typically the GAC in a screening exercise). The main tool used to draw conclusions based on the 2020 guidance is a comparison of a 2-way confidence interval with the critical concentration. A confidence interval consists of two sets of numbers; an interval i.e. a range of values plus a pre-determined level of confidence e.g. 80%. A common interpretation of a confidence interval of say 80% is that "*there is an 80% chance that the true mean concentration level of the contaminant in a sampling zone lies between X concentration and Y concentration*".

The current guidance for planning says that the site has to be "safe" which suggests we should use a large confidence interval such as 95% or higher to make a decision. This means that there is a 95% chance of the true mean concentration lying in this interval, there is also a 5% chance it lies outside this interval. One could then conclude that the requirements of planning have been met if the 95% confidence interval lies below the critical concentration.

The guidance recommends that at least two confidence levels are used such as 90% and 99% or 80% and 95%. By using two differing confidence intervals, we can use the smaller confidence interval (e.g. 80% confidence interval) to say "*we think the mean is most likely to be inside this range*" and the larger confidence interval (e.g. 95% confidence interval) to say "*we think the mean is most unlikely to be outside this range*".

If the confidence interval extends to above the critical concentration, then further action may be required.

Controlled Waters

The European Water Framework Directive (WFD) became UK law in December 2003. It was created to ensure that European countries manage their rivers, groundwater and lakes so that they stay healthy for people and for wildlife.

This is achieved by the use of chemical standards (Water Quality Targets – WQTs) for surface waters and groundwater. These values describe concentrations of chemicals that are not expected to cause harm to environmental organisms or human health, provided they are not exceeded. The same chemical may have several standards for different environmental regimes, and for different protection objectives.

Statutory Standards are set in legislation and if exceeded, this constitutes non-compliance with statutory obligations. European Directives are implemented in England and Wales by corresponding statutory instruments (i.e. regulations- The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 and The Private Water Supplies (England) Regulations 2016. SI 2016 / 618). In Scotland, the Public Water Supplies (Scotland) Regulations 2014 apply. The statutory instruments can be the exact same standards as they appear in the Directive or be more stringent.

A number of non-statutory standards also exist, these are set by various organisations (including the EA) for chemicals that are considered to be of concern, but are not covered by any specific legislation.

The chemical standards used in the UK to control impaction of contamination on controlled waters are Environmental Quality Standards (EQS). These cover a large number of compounds. EQS are available for inland surface waters (freshwater) and other surface waters (transitional and marine).

Several EQS are based on bioavailable metal proportions (i.e. copper, lead, manganese, nickel and zinc). A software tool (M-BAT) is available from the Water Framework Directive - UK TAG website for calculating the bioavailable fraction. Where this tool has been used, the bioavailability has been taken into account by calculating site-specific $PNEC_{dissolved}$ (Predicted No Effect Concentration) values. These enable the dissolved concentration data to be compared with the PNEC as if it were an EQS.

UK Drinking Water Standards (DWS) apply to waters abstracted for human consumption. Where no UK or EU drinking water standard exists, reference is made to the World Health Organisation criteria (2011).

The DWS apply to groundwater or to surface water used for abstraction and the EQS apply to surface water where the aquatic ecosystem is the receptor. Where the most appropriate water quality target cannot be determined with certainty, the lowest one is adopted in line with the precautionary principle.

In some instances, the laboratory detection limits (LODs) may be greater than the water quality target it is being screened against, but it should be noted that these comparisons are an initial screening assessment. It may be the case that lower LODs could be obtained using a more specialised technique, but it would be disproportionately expensive to adopt the more costly specialist technique for initial screening exercises.

The preference of BSL is to have testing carried out on actual samples of ground/surface water rather than theoretical values obtained from leachate testing, which is considered to often be highly conservative. Data from water samples obtained or from leachate analysis is then compared against the screening criteria adopted by BSL, which are presented overleaf.

When screening values are exceeded then further consideration is required. This could include further additional detailed investigation and detailed quantitative risk assessment (DQRA) to further define the risk or to design appropriate remedial measures to either remove the source or break the pathway.

Ground Gas Risk Assessment

BS8485:2015+A1:2019, BS 8576:2013, CL:AIRE RB17, and NHBC 'Hazardous Ground Gas - An essential guide for housebuilders' 2023, are the current guidance which gives up-to-date advice on all aspects of permanent ground gas risk. BS8576 alongside CIRIA C682 also provides guidance on assessment of hydrocarbon vapour intrusion.

The CL:AIRE publication 'Good Practice for Coal Mine Gas Emissions" 2021 provides guidance on the assessment of risks from mine gas sources.

The above all outline good practice in investigation, the collection of relevant data and monitoring programmes in a risk-based approach to ground gas contamination. The aim of the guidance is for a consistent approach to decision making, particularly relating to the scope of protective design measures on a site-specific basis.

Legislative Framework
BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665 provides technical guidance, however they also recognise the context into which the guidance has to be employed. Government policy is based upon a "suitable for use approach", which is relevant to both the current and proposed future use of land. When considering the current use of land, Part IIA of the Environment Protection Act 1990 provides the regulatory regime. The presence of hazardous ground gases could provide the "source" in a "pollutant linkage" which could lead the regulator to determine that considerable harm or there is a significant possibility of such harm being caused. Under such circumstances, the regulator would determine the land to be "contaminated land" under the provisions of the Act, setting out the process of remediation as described in the DETR Circular 02/2000 *Statutory guidance on contaminated land.*

Generation Potential of Sources

BS 8576:2013 Figure 6 provides a basis for assessing the generation potential from sources identified as part of the assessment. These are summarised below:

Generation Potential	Typical Sources
Very Low	• Natural carbonate soil and strata, e.g. chalk and limestone. • Natural soil strata with a low degradable organic content, e.g. alluvium, peat. • In-filled pond less than 15 m diameter, in-filled before 1930s to 1940s. • Made ground with low degradable organic content (e.g. up to 5% organic material such as pieces of wood, pieces of paper, rags, etc. with a high proportion of ash and no food or other easily degradable waste). • Mine workings shallow or shaft (where there is clear evidence that they are flooded). • Inert landfill sites (and pre -1945 landfills).
Low	• Natural soil strata with a high degradable organic content (DOC). • Made ground with total organic carbon (TOC) up to 6% (e.g. dock silt, no food or other easily degradable waste). • Foundry sand (includes phenolic binders, rags and wood that decay, albeit at low rates). • Landfill 1945 to mid 1960s (see also Moderate below).
Moderate	• Sewage sludge. • Mine workings – unflooded, more than 50 years since last worked (gas is liberated from coal when mine workings are excavated; this continues for up to about 50 years). • Landfill 1945 to mid 1960s (this could also be “low” or, if disturbed, “high”).
High	• Landfill mid 1960s to early 1990s. • Mine workings – unflooded – less than 50 years since last worked.
Very High	• Municipal landfill sites. • Landfill early 1990s onward.

Frequency and Duration of Monitoring

BS8576 notes to determine where and how to monitor ground gases requires consideration of credible pathways of possible exposure of the receptors, taking into account what is known about the geology and hydrogeology, building construction and services layout, foreseeable events such as flooding, changes in groundwater level, climate change, extreme weather conditions, the closure of mines, and possible changes to the gas regime caused by future development.

The monitoring period for a specific site should cover the “worst case” scenario. A “worst case” scenario will typically occur during falling atmospheric pressure and, in particular, weather conditions such as rainfall, frost and dry weather.

The benefits of additional information and whether it is likely to change the scope of gas protection should be considered, as are the consequences of failing to characterise adequately pollutant linkages. Investigations concerned with ground gas are required to provide monitoring data sufficient to allow prediction of worst case conditions enabling the confident assessment of risk and subsequent design of appropriate gas protection schemes. Monitoring programmes should not be an academic exercise in data collection. CL:AIRE publication TB17 “Ground Gas Monitoring and ‘Worst-Case’ Conditions” provides further guidance.

Below are matrices that will aid in determining an appropriate number of gas monitoring visits and the length of monitoring period.

Typical/idealised periods of monitoring

		Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	1 month	2 months	3 months	6 months	12 months
	Moderate (Apartments)	2 months	3 months	6 months	12 months	24 months
	High (Low rise Residential)	3 months	6 months	6 months	12 months	24 months

Typical/idealised frequency of monitoring/Number of Visits Required

		Gas Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4	6	6	12	12
	Moderate (Apartments)	6	6	9	12	24
	High (Low rise Residential)	6	9	12	24	24

Notes

1 Generation potential of sources based on descriptions within BS 8576:2013.

2 At least two sets of readings should be at low and falling atmospheric pressure (but not restricted to periods below <1000 mb) known as worst case conditions. Historical data can be used as part of the data set (Table 5.5b).

It is recommended that newly installed monitoring wells are left for 24 hours to allow the soil gas to reach equilibrium. It should be recognised, however, that some soil gas regimes could take considerably longer (up to seven days). Interpretation of any initial readings should take this equilibrium process into account.

Gas Risk Assessment

Within BS8485:2015+A1:2019 a semi-quantitative method is set out for the assessment of risk.

This method (Modified Wilson and Card) uses the concept of Gas Screening Values (GSVs) and typical threshold concentrations of carbon dioxide and methane to identify levels of risk. Sites are then classified into a 'Characteristic Situation' or 'CS' from CS1 where no mitigation is required and CS2 increasing up to CS6 where protection measures are required.

The NHBC guide 'Hazardous Ground Gas - An essential guide for housebuilders' 2023 provides further assessment tools for ground gas monitoring data, including the use of ternary plots to determine ground gas sources.

A separate approach to assessment without monitoring data is discussed under the RB17 header further below.

CIRIA C682 and BS 8576:2013 provide guidance on assessment of VOC intrusion risk.

Ground Gas Mitigation

Where a risk is determined to be present by assessment, BS8485:2015+A1:2019 provides guidance for the design of protection systems based on a points scoring system depending on the characteristic situation, structure type, structural barrier types, ventilation and a gas resistant membrane. Source removal can also be considered.

The design requires the structures to be categorised into one of four building types: Type A, Type B, Type C or Type D, related to the construction and end use of the building, together with the control of future structural changes and maintenance.

CIRIA C748 provides advice on the use of membranes as VOC vapour barriers.

CIRIA C735 sets out the approach for verification of installed mitigation measures. Note that if a membrane is installed it must be verified in accordance with CIRIA C735 or it will score zero points and assumed to not afford any protection.

RB17 Approach
CL:AIRE RB17 (Card et al 2012) is a pragmatic approach to ground gas risk assessment and was developed because gas concentration, pressure and flow rate measured in a well headspace may not be representative of the conditions in the surrounding formation.

In these low-risk situations, the approach is to use the conceptual site model and the estimation of the likely gas generation from a source to identify where or if gas monitoring is required to better define the risks.

Under this approach, for sites with natural soils only with no credible methane source, then no action is required (no monitoring or gas protection measures) as this represents Characteristic Situation 1 (CS1).

Radon
Advice on radon protection in England is provided by the UK Health Security Agency, https://www.ukradon.org/information/ukmaps and by the BRE (BR 211 (Scivyer 2023).

Areas of the country can be categorised according to the percentage of existing homes where radon is present above the Action Level:

- 0-1% lower probability.
- 1-3% and 3-10% intermediate probability.
- >10% higher probability.

Basic radon protection measures are required in new buildings and extensions in areas of England and Wales where 3-10% of properties exceed the Action Level and full radon protection measures where >10% exceed the Action Level.

Unexploded Ordnance (UXO) Guidance

Clients have a legal duty under the CDM 2015 Regulations to provide designers and contractors with project-specific health and safety information needed to identify hazards and risks. This includes the possibility of unexploded ordnance (UXO) being encountered on the site. Further details are given in CIRIA report C681.

BSL carry out non-specialist UXO screening exercises by considering any evidence of UK defence activities on or near the site evident from gathered information and the unexploded aerial delivered bomb (UXB) online risk maps produced by Zetica. Other data sources are available, but as a first stage screening exercise the freely available online Zetica maps have been used. The level of risk stated is that determined by Zetica, a company experienced and considered competent in the assessment of UXO.

Geotechnical Guidance

The CD 622 'Managing Geotechnical Risk' guidance document defines the technical approval and certification procedures to be used to ensure that the risk associated with the geotechnical activities are appropriately managed.

In the case of the geotechnical hazard identification at the intrusive investigation stage, this is referred to as the **ground model**.

The geotechnical sections of the report contain the factual information on the geology and relevant site data, including both in situ and laboratory testing, with a geotechnical evaluation of the information stating the assumptions made in the interpretation of the data.

Derived values of geotechnical parameters are obtained from test results by theory (book values), correlation or empiricism in general accordance with BS EN 1997-2:2007 (EC7).

Where derived geotechnical parameters are to be used in designs in accordance with EC7, the selection of characteristic values for geotechnical parameters using the derived values is carried out by well-established experience.

The characteristic value is a cautious estimate of the value affecting the occurrence of the limit state. For any particular material type there may be more than one characteristic value for each parameter because there may be more than one limit state.

The second stage is the selection of design values. The design values are either derived from the characteristic value by applying the relevant partial factors or assessed directly. Similarly, there can be several design values for the same material type.

In the event that geotechnical designs are included in this report, selection of the characteristic and design values is included. Otherwise, it is the duty of the geotechnical designer to determine these within a separate design report (a GDR).

Where it has not been possible to reasonably use an EC7 compliant technique, a practical alternative has been adopted to obtain indicative soil parameters and any interpretation is based upon engineering experience, local precedent where applicable and relevant published information.

In addition to the above:

- Assessments for highways designs are based on CD 622 Managing Geotechnical Risk.
- The assessment of sustainable drainage is based on BRE365 and CIRIA C753 'The SuDS Manual'.
- Earthworks Assessments are based on SHW Series 600 and BS6031.
- Risks from mining are assessed adopting guidance from CIRIA C758.

Re-Use of Waste Soils Guidance

Definition of Waste
The Environment Agency considers waste to be "...*any material that is discarded, or intended to be discarded*..." this includes any soil from drainage trenches, foundation arisings, site strips etc. It is no longer required in its original location, therefore it is considered to be waste. Without an appropriate materials management plan, permit or exemption in place, by law this material is defined as "illegally deposited waste".

Landfill tax rules allow HM Revenue & Customs (HMRC) to recover landfill tax on illegally deposited waste on construction sites. This could lead to excessive costs without the correct documentation in place. In addition, a person who makes, knowingly causes or knowingly facilitates a disposal to be made at an unauthorised site is also liable to pay Landfill Tax.

CL:AIRE: Code of Practice
Where materials are excavated for construction purposes, wherever possible these should be retained on site for engineering purposes if they are suitable for use. This can be implemented under the CL:AIRE "Development Industry Code of Practice for the Definition of Waste" (CL:AIRE DoWCoP), also commonly referred to as a "Materials Management Plan".

https://www.claire.co.uk/projects-and-initiatives/dow-cop

Developers and contractors are advised to complete all works under the DoWCoP where applicable.

To implement the DoWCoP (for Route A), there is a requirement to notify the Environment Agency and Local Authority of the intention to use the code of practice in principle, after which there is a 21-day notice period for their response.

In order to re-use soils under the DoWCoP, there are four key criteria that need to be met:

- The aims and objectives of the project meet the requirements of the Waste Framework Directive (does not harm human health or the environment).
- The soils can be demonstrated to be suitable for use (backed up by chemical/geotechnical testing and assessment).
- There is certainty of use (planning consents are in place alongside materials tracking, which should be in place as part of good site practice in any case).
- Quantity (the quantity of materials used should be known).

Potential scenarios where soils may be able to be re-used:

- Material capable of being used in another place on the same site without treatment.
- Material capable of being used in another place on the same site following ex-situ treatment on site.
- Material capable of being used in another development site without treatment (Direct Transfer).
- Material capable of being used in another development site following ex-situ treatment on another site e.g. Hub site.

In order to satisfy these requirements, the following are required:

i) Consultation/approval with Local Authority & Environment Agency to confirm they have no objections to the proposed re-use of waste soils, or the risk assessments for the site.
ii) Risk Assessments to demonstrate that the site does not present an Environmental Hazard.
iii) Remediation Strategy for contaminated sites (or Design Statement for non-contaminated sites).
iv) Materials Management Plan (MMP) which details material generated stockpiles and the end use.
v) Volume calculations.
vi) Planning permission for the development.
vii) Contractual details to be clear, regarding who steps in is a contractor goes into administration/liquidation.

The use of the CoP is effectively industry regulated, there is a requirement to appoint an independent Qualified Person (QP) who checks all the requirements have been met and registers the documentation with the Environment Agency. This person must not have had any involvement with the preparing of the risk assessments or remedial strategy on the site.

Soils which require treatment on site (e.g. bioremediation, stabilisation etc) may require an Environmental Permit for treatment, together with justification and validation to prove, once treated, this material is suitable for use. Construction activities carried out on uncontaminated soils solely for the purpose of improving geotechnical properties are not generally regarded as waste treatment operations and do not require a permit.

Site management procedures need to be in place to ensure that material is tracked through from excavation stockpiling, treatment and remediation processes. Should the process of material tracking be considered non-robust, or not adhered to, this may fail the test whether excavated materials may be considered non-waste.

Any declared MMP should be amended as new import sources are added.

Regardless of implementing re-use under the code of practice or not, all sites should have some form of materials tracking in place in compliance with current legislation. Any re-use scheme should also be designed to minimise disposal costs. Note that for re-use of landfilled materials or mining wastes, the DoWCoP may not apply and a Waste Recovery Permit (or others) may be required. Liaison with the Environment Agency would be needed on a case by case basis to determine the best option.

Once the project is complete, a verification report detailing soils re-use/import will need to be produced and submitted to CL:AIRE, which may be subject to a random audit process. Sites found to be non-complaint with the CoP can be referred to the EA for further investigation.

Soils Re-use under Exemptions and Permits
Other potential options to allow the re-use and/or import of soils and aggregates on site are provided in the table below. Applies to England/Wales only – Scotland differs.

Re-use Mechanism	Description
U1 Exemption	Can be applied to re-use/import of soils and stones, but only up to 1000 tonnes or for brick and concrete up to 5000 tonnes. This is usually an efficient way to re-use small volumes of waste materials. However, only one U1 can be filled in per site in any 3-year period. Quick and free via online registration.
WRAP Quality Protocols	Describes how processed demolition arisings can be removed from regulatory waste regime. Requires a demonstration of appropriateness by: • Factory Production Control Manual. • Facility Permit (or Exemption). • Grading Analysis.
Waste Framework Directive (WFD) exclusion	In regard to "clean" naturally occurring soils only that are to be re-used on their site of origin, these are covered by a Waste Framework Directive (WFD) exclusion which is an EA regulatory position statement. So long as the project can prove the four criteria listed above for the DoWCoP, then permits or the DoWCoP are not required. However, many projects still use the CoP to ensure compliance.
T5 Screening and blending of waste	The T5 exemption allows you to temporarily treat waste on a small scale to produce aggregate or soil at a particular location, such as a construction or demolition site. The limit is 5,000 tonnes. This applies to: • Screening soil on a demolition site to remove wood and rubble. • Blending soil and compost that has been produced under an exemption on a construction site to produce better soil for landscaping on that site (e.g. peaty deposits). • Crushing waste (except bricks, tiles and concrete) before screening or blending • Grading waste concrete after it has been crushed to produce a certain type of aggregate.
T7 Exemption	The T7 allows treatment of waste bricks, tiles and concrete by crushing, grinding or reducing in size. This needs to be registered with the Local Authority.
Other Permitting Routes	Other options include use under an Environmental Permit (Standard or Bespoke Rules), however these may be a time consuming and costly route, where use of the other above options (if applicable) are likely to be more feasible in construction.

There are also potential non-enforcement positions for re-use e.g. a site has a large volume waste illegally deposited on it (not by landowner). The new owner is keen to re-use waste where possible to reprofile the site (planning condition granted). The DoWCoP could not be used as materials already excavated and deposited as a waste (illegally). The EA may agree that although the DoWCoP not applicable, they would take a non-enforcement position if the works were completed in accordance with the DoWCoP – this would need to be agreed in advance.

Waste Classification and Disposal Guidance for Soils

Introduction
As described in the 'Waste Duty of Care Code of Practice (2016)' any substance or object that the holder discards, intends to discard or is required to discard is a waste. Waste producers have a duty of care to classify the waste they are producing:

- Before it is collected, disposed of or recovered.
- To identify the controls that apply to the movement of the waste.
- To complete waste documents and records.
- To identify suitably authorised waste management options.
- To prevent harm to people and the environment.

The most sustainable and economic method of dealing with waste soil is usually the retention and re-use on site. Where this is not possible there are three main options for the disposal of soils:

1. Disposal to a permitted waste recycling facility.
2. Re-use on another site (subject to the suitability).
3. Disposal to a landfill site.

The disposal to a permitted facility will be subject to the **specific conditions of the permits for each individual facility** and will vary dependent on location and environmental sensitivity of the receiving site. Re-use on another site will also be subject to the acceptability criteria of that site.

The guidance below relates to disposal to **landfill sites only**.

Background for Landfill Disposal
The Landfill Directive places controls on waste disposal. These controls include requirements to follow the waste acceptance procedures and criteria that have been agreed by the Council of the European Union and are laid out in Council Decision 2003/33/EC.

Before a waste can be accepted at a landfill site, the landfill **operator** must be satisfied that the waste meets permit conditions, the waste acceptance procedures (WAP) and waste acceptance criteria (WAC).

If disposal to landfill is the best management option for the waste soils, these procedures **must** be followed or the operator may refuse to accept the waste.

Key Points:

- Not all waste can be landfilled.
- Landfills are classified according to whether they can accept hazardous, non-hazardous or inert wastes.
- Wastes can only be accepted at a landfill if they meet the waste acceptance criteria (WAC) for that class of landfill.
- Most wastes must be treated before you can send them to landfill.
- There are formal processes for identifying and checking wastes that must be followed before wastes can be accepted at a landfill site.

Classification
Wastes are listed in the European Waste Catalogue and grouped according to generic industry, process or waste types. Wastes within the EWC are either hazardous or non-hazardous. Some of these wastes are hazardous without further assessment (absolute entries) or are 'mirror' entries that require further assessment of their hazardous properties in order to determine whether they are hazardous waste.

Waste soil has mirror entries on the EWC and as such the first phase of the waste classification process is that of determining if the waste is hazardous or not i.e. the hazard assessment. The most common EWC waste codes related to soil are:

17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03*	soil and stones containing dangerous substances
17 05 04	soil and stones other than those mentioned in 17 05 03

Soils may contain certain contaminants (e.g. asbestos, oil,) which have prescribed concentration thresholds, that if breached will render the material hazardous waste. These are based on specific "hazardous properties" which include hazards such as carcinogenicity, flammability and toxicity.

In the first instance the concentrations of plausible contaminants within the soil should be identified and wastes should be **classified based on their total concentrations** and classified as either hazardous or non-hazardous waste. WAC analysis must not be used for waste classification.

Waste Definitions

Inert	• Will not undergo any significant physical, chemical or biological transformations. • Will not dissolve. • Will not burn. • Will not physically or chemically react. • Will not biodegrade. • Will not adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to human health. • Has insignificant total leachability and pollutant content. • Produces a leachate with an ecotoxicity that is insignificant (if it produces leachate).
Non-Hazardous	Is not inert (see above). Is not hazardous (see below).
Hazardous	Soil has hazardous properties as defined in WM3 (Guidance on the classification and assessment of waste (1st edition 2015)- Technical Guidance).
Stable Non-reactive hazardous waste#	Hazardous waste, the leaching behaviour of which will not change adversely in the long-term, under landfill design conditions or foreseeable accidents either: in the waste alone (for example, by biodegradation), under the impact of long-term ambient conditions (for example, water, air, temperature or mechanical constraints) or by the impact of other wastes (including waste products such as leachate and gas).

This option allows hazardous waste that is stable and thus has a low leaching potential to be deposited in cells with a standard of containment consistent with non-hazardous wastes.

WAC Testing

The purpose of WAC analysis is to confirm that the waste complies with the relevant WAC for the receiving landfill. If the waste has any disposal route other than a landfill site (e.g. recycling facility, incineration etc) then WAC is not relevant. Furthermore, the WAC limits **cannot** be used to make an assessment of whether a waste is hazardous. WAC testing does however define if a non-hazardous waste is suitable for an inert landfill.

Classification based on Total Concentrations[1]	Non-Hazardous Waste		Hazardous Waste	
WAC testing	Below inert WAC limit values:	Above inert WAC limit values:	Below hazardous WAC limit values	> WAC limit values
Landfill requirements	INERT landfill	NON-HAZARDOUS landfill[2]	HAZARDOUS landfill	PRE-TREATMENT[3]

1 Total concentrations are defined as tests results on solids as opposed to leachate (i.e. a liquid).
2 Individual sites may have certain limit values pre-determined in their licence.
3 After pre-treatment the material characteristics may have changed to an extent that allow the soil to be re-classified.
4 Possibility that wastes could be classified as stable Nonreactive HAZARDOUS waste in non-hazardous Landfill (e.g. soils containing low concentrations of asbestos, gypsum or sulphate bearing soils).

Waste classified as non-hazardous can be accepted into a non-hazardous landfill without having to pass any numerical WAC.

Soils above hazardous WAC limit values require pre-treatment prior to disposal. The effective pre-treatment, typically involving separation, sorting and screening, can offer cost savings through reducing the hazardous

nature and volumes of soil. Costs for disposal of non-hazardous/hazardous soils are significant compared to the disposal of inert material.

Greenfield Sites and Inert Waste

The possibility of automatic inert classification naturally occurring "clean" soils should be explored in accordance with the requirements of paragraph 10 (wastes acceptable without testing at landfills for inert waste) of the Landfill (England and Wales) (Amendment) Regulations (2005). This is the case if:

- They are single stream waste of a single waste type (although different waste types from the list may be accepted together if they are from a single source); and
- There is no suspicion of material or substances such as metals, asbestos, plastics, chemicals, etc to an extent which increases the risk associated with the waste sufficiently to justify contamination and they do not contain other classes of landfill (e.g. the waste producer can characterise the waste based on visual assessment and written description with supporting evidence such as a desk study, subject to agreement by the landfill operator).

Hydrocarbons in Soils

WM3 uses the term Oil or Waste Oil to cover hydrocarbons products such as fuel oil, petrol or diesel. These are defined by WM3 as hazardous under an absolute entry in the List of Wastes. However, hydrocarbons in soils are a mixture rather than a pure product and are therefore not absolute entries.

Known Oils

The simplest scenario is where the identity of the contaminating oil is known or can be identified. If the oil is known the manufacturer's or supplier's REACH compliant safety data sheet for the specific oil can be obtained and the hazard statement codes on that Safety Data Sheet can be used for the hazardous waste assessment.

Where the identity of the oil can only be identified down to a petroleum group level (i.e. the contaminating oil is known to be diesel, but the specific type/brand is unknown), then the classification of that petroleum group should be used in the assessment. The marker compounds associated with that petroleum group may be used to confirm carcinogenicity.

Oils may contain a range of hydrocarbons, so the presence of for instance Diesel Range Organics (DRO) does not enable the assessor to conclude that diesel is present. These hydrocarbons may have arisen from other oils, the laboratory needs to provide an interpretation of the chromatograph to determine if it is consistent with diesel or weathered diesel as a whole.

The concentration of known oils should be determined using a method that as a minimum spans the range in which the carbon numbers for that known oil fall.

Unknown Oils

Where hydrocarbons are contaminating soils, it is likely that the oil will be unknown or cannot be determined.

WM3 states that:

For contaminated land specific consideration must be given to the following before proceeding:

- The presence of other organic contaminants, for example solvents or coal tar that could be detected as hydrocarbons. Coal Tar is not an oil and is considered separately in WM3 example 2. Where the site history or investigation indicates the presence of hydrocarbons from oil and other sources (e.g. coal tar), and the origin of the hydrocarbons cannot reliably be assigned to either, then a worst case approach of considering the hydrocarbons both as waste oil (in accordance with this example) and from other sources, for example coal tar should be taken.

- The presence of diesel, or weathered diesel, should be specifically considered by the laboratory and where this is confirmed by the hydrocarbon profile the oil should be assessed as a known or identified oil (diesel).

The use of marker compounds is optional; however, it is recommended that where possible the marker compounds should be used. WM3 states:

If the identity of the oil is unknown, and the petroleum group cannot be established, then the oil contaminating the waste can be classified as non-carcinogenic/mutagenic due to the presence of oil if all three of the following criteria are met:

- The waste contains benzo[a]pyrene (BaP) at a concentration of less than 0.01% (1/10,000th) of the TPH concentration (This is the carcinogenic limit specified in table 3.1 of the CLP for BaP)
- This has been determined by an appropriate and representative sampling approach in accordance with the principles set out in Appendix D of WM3, and
- The analysis clearly demonstrates, for example by carbon bands or chromatograph, and the laboratory has reasonably concluded that the hydrocarbons present have not arisen from petrol or diesel.

For example:

TPH Concentration (mg/kg)	Petrol or Diesel	BaP (mg/kg)	Classification
10,000	No	0.9	Non- Hazardous
1,000	No	Not available	Hazardous
1,000	Yes	Not relevant	Hazardous

References

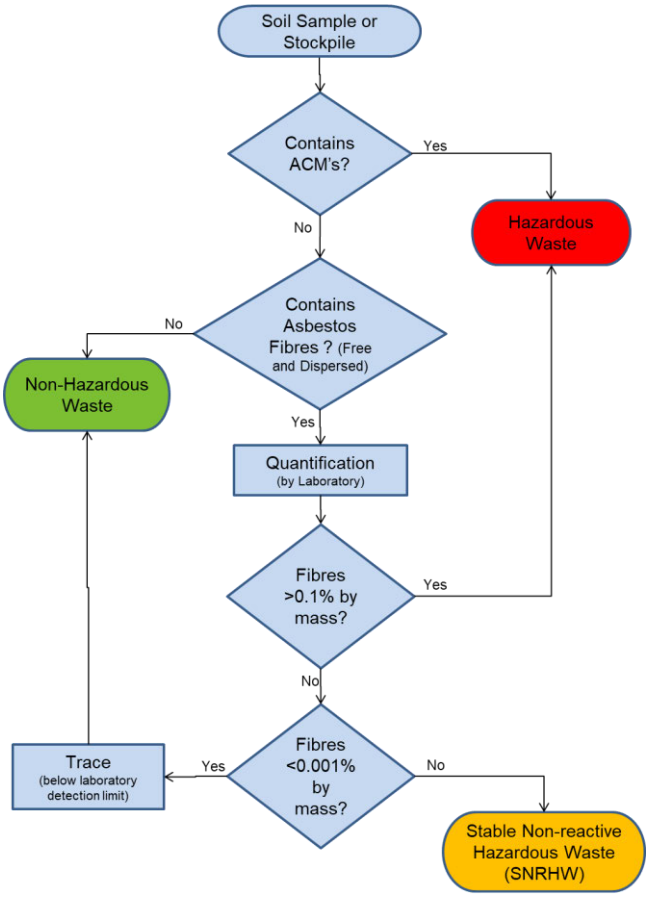
1. Environmental Permitting (England and Wales) Regulations 2010 (as amended) (EP Regulations), the Landfill Directive (1999/31/EC) and the subsequent Council Decisions.
2. Environment Agency Environmental Permitting Regulations: "Inert Waste Guidance- Standards and Measures for the Deposit of Inert Waste on Land" 2009.
3. Environment Agency "Waste acceptance at landfills - Guidance on waste acceptance procedures and criteria" Nov 2010.
4. Environment Agency "Guidance on the classification and assessment of waste (Technical Guidance WM3)".
5. Classification, Labelling and Packaging of Substances Regulation (EC 1272/2008) (CLP).
6. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.
7. 2014/955/EU: Commission Decision of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament.
8. Environmental Permitting Guidance The Landfill Directive For the Environmental Permitting (England and Wales) Regulations 2010 Updated March 2010 Version 3.1.
9. Classification, Labelling and Packaging of Substances Regulation (EC 1272/2008) (CLP).

Waste Containing Asbestos

The assessment of asbestos containing waste is dependent on whether the asbestos is present as:

- Fibres that are free and dispersed, or
- Identifiable pieces of asbestos containing materials (ACM's).

Identifiable pieces of asbestos are any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye. The result is that commonly soils with visible ACM's are sorted and the ACM's removed by hand picking and separate disposal.



Should soils contain asbestos, the concentration and type of asbestos identified, in addition to the chemical composition (i.e. hazardous or non-hazardous detailed above), will determine which waste code is applicable to the soils and which landfill will accept it as summarised below:

Waste	Conc. by Weight (%)	EWC 2002 Catalogue Entry Code	Waste Disposal Route
Non-hazardous containing asbestos fibres	<0.001 - <0.1%	17 05 04 (soil and stones other than those mentioned in 17 05 03*)	Non-hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a stable non-reactive hazardous landfill site.
Hazardous containing asbestos fibres	<0.001 - <0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a hazardous landfill site.
Non-hazardous soils containing asbestos fibres	>0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill authorised to receive asbestos, or in a stable non-reactive hazardous waste cell at a non-hazardous landfill authorised to receive asbestos.

Waste	Conc. by Weight (%)	EWC 2002 Catalogue Entry Code	Waste Disposal Route
Non-hazardous Soils containing ACM (Mechanically separable)	>0.1%	17 06 05 (construction material containing asbestos) 17 05 04 (soil and stones other than those mentioned in 17 05 03*)	ACMs disposed of at a hazardous landfill authorised to receive asbestos, or in a stable non-reactive hazardous waste cell at a non-hazardous landfill authorised to receive asbestos. Soils should be disposed of at a non-hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a stable non-reactive hazardous landfill site.
Hazardous soils containing ACM	>0.1%	17 05 03* (soil and stones containing dangerous substances)	Hazardous landfill subject to achieving Waste Acceptance Criteria (WAC) for a hazardous landfill site.

Asbestos concentrations below 0.001% by mass are below standard laboratory detection limits and are not currently regarded as containing asbestos for the purposes of disposal and may be disposed of to an inert landfill site[1]. These levels are often termed "trace" by laboratories.

Asbestos concentrations between 0.001% and 0.1% are stable non-reactive hazardous waste (SNRHW)[1]. Waste transfer stations where soil recycling takes place may be able to take SNRHW, but are unlikely to take soils containing asbestos above trace concentrations.

The following codes should be assigned to the asbestos waste as appropriate:

17 06	Insulation materials and asbestos-containing construction materials
17 06 01	Insulation materials containing asbestos
17 06 03	Other insulation materials consisting of or containing hazardous substances
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05	Construction material containing asbestos

WM3 indicates that 17 06 05 would normally be used in preference to 17 06 01 for the asbestos in asbestos contaminated soil and stones.

Construction materials containing asbestos and "*other suitable materials*" may be landfilled at landfills for non-hazardous waste in accordance with the Landfill Directive without testing.

This means that wastes that are only hazardous because of their asbestos content can be disposed of at landfills for non-hazardous waste in separate landfill cells that only accept asbestos wastes and other suitable materials. The Landfill Directive requires that stable non-reactive hazardous waste shall not be deposited with biodegradable waste (for example organic material, household waste, paper etc..) and must meet the waste acceptance criteria set out in accordance with Annex II.

Construction

Health and Safety Executive (HSE) guidance on asbestos is not directly related to soil and much of the guidance focuses on the removal of asbestos from buildings. The overarching legislation is the Control of Asbestos Regulation (CAR 2012). However, where work involves (or is likely to involve) contact with asbestos then CAR 2012 requires a risk assessment including whether the work is licensed or notifiable non-licensed work and may require an Asbestos Management Plan. Work becomes notifiable if it is considered that the control limit could be exceeded.

Brownfield sites frequently have soils that contain asbestos and the presence of asbestos needs to be considered within the context of construction, particularly in relation to groundworks. The exposure of soils and the use of excavators and plant to move soil around increases the possibility of fibres becoming airborne. However, it is good site practice to not generate dusts and to employ dust suppression on all sites regardless of the presence of asbestos.

The legal control limit for asbestos is 0.1f/ml over a continuous four-hour period. The control limit is not a '*safe*' level and exposure from work activities involving asbestos must be reduced to as far below the control limit as possible.

Clearly the higher the concentrations in the soil the greater potential there is for fibres to be released, however IOM publication TM/88/14 "the release of dispersed asbestos fibres from soil" 1988 concludes that:

- Mixtures of asbestos in dry soils with asbestos content as low as 0.001% can produce airborne respirable asbestos concentrations greater than 0.1f/ml in dust clouds where the respirable dust concentrations are less than 5mg/m3.
- An action limit is recommended of no higher than 0.001% asbestos in soils above which steps should be taken to minimise exposure to airborne fibres (e.g. by wetting).
- The addition of relatively small quantities (10%) of water can reduce the airborne fibre concentrations by an order of magnitude.

Where asbestos has been identified at concentrations above 0.001% as free and dispersed fibres in the soil precautions need to be adopted. Concentrations below this are considered to be normal background, although good site practice dictates that the generation of dusts should be avoided and therefore any fugitive fibre release from minor concentrations should be kept to a practical minimum.

End Use
The use of materials containing asbestos and material containing asbestos is prohibited under EU legislation.

Asbestos containing materials can remain in situ under a suitable cover system which may be hard surfacing or soft landscaping (with or without hard dig layers and markers).

There is a risk that future maintenance may compromise such systems and details of the presence of asbestos should be kept in the Health and Safety File.

Publications from the JIWG provide guides for decision making in relation to construction.

The re-use of waste soils should be undertaken in accordance with the CL:AIRE Code of Practice and is subject to suitable risk assessments demonstrating low risk. There is nothing that specifically excludes the re-use of soils containing asbestos as fill to raise levels. However, the movement of materials increases the risk of fibres becoming airborne and suitable precautions will be required. Re-use of soils containing asbestos should be as per CARSOILS.

The re-use of soils containing asbestos at concentrations above hazardous waste levels may be met with regulatory opposition. Assuming a suitable strategy could be agreed this would take a considerable amount of time and is only likely to be feasible where there is a long program for implementation.

Asbestos in Soil as Free Fibres

Concentration (by weight)	Waste Disposal				Construction Issues	End Use	
	Recycle	Inert	SNR	Haz		Suitable for re-use on site	Precautions
Not detected	√	√			No precautions necessary, however on a brownfield site asbestos not previously identified may be found during works and a statement within the contractor's method statement for how they will deal with this unforeseen asbestos would be good practice to ensure compliance with CAR2012.	Yes.	None.
Trace (<0.001%)		√ [2]			Precautions are unlikely to be required, however a detailed method statement may be required to ensure compliance with CAR2012. Basic asbestos management good practice will be required. Typically precautions would include: • Ensuring soils do not dry out to become dusty. • Site personnel have the risk communicated at induction stage.	Yes Soils can be re-used under CL:AIRE CoP with the correct precautions in place.	Generally clean cover or hardstanding cover required.
0.001% – 0.099%			√		Contractor needs to produce an Asbestos Management Plan in accordance with CAR2012 as part of their method statement. Typical precautions would include: • Site personnel have the risk communicated at induction stage. • Ensuring personnel have suitable training. • Task monitoring to inform PPE requirements. • Ensuring soils do not dry out to become dusty and that misting is available during groundworks. • Separate stockpiling. • Clean haulage routes.	Possibly. Soils may be able to be re-used under CL:AIRE CoP, subject to a satisfactory Risk Assessment and regulatory agreement with the correct precautions in place.	Clean cover with hard dig/demarcation layer or hardstanding cover required.
0.1+%				√	Contractor needs to produce an Asbestos Management Plan in accordance with CAR2012 as part of their method statement. Typical precautions would include: • Site personnel have the risk communicated at induction stage. • Ensuring personnel have suitable training. • Task monitoring to inform PPE requirements. • Site wide and or perimeter monitoring. • Ensuring soils do not dry out to become dusty and that misting is available during groundworks. • Separate stockpiling.	Unlikely [3] Re-use of soils containing asbestos within an earthworks scheme will involve significant engineering and the risk for generating dusts will be significantly	Clean cover and a hard dig / demarcation layer. A plan should be in place for future excavations as part of the Health and Safety File.

Concentration (by weight)	Waste Disposal				Construction Issues	End Use	
	Recycle	Inert	SNR	Haz		Suitable for re-use on site	Precautions
					• Clean haulage routes. • Decontamination unit	increased with repeated handling and compaction.	

1. The standard laboratory detection limit is normally 0.001%. Below 0.001% is trace and currently regarded as not containing asbestos for the purposes of disposal off site. However the waste producer has a duty to fully classify the waste and the presence of trace asbestos should be declared. Consequently it is unlikely that a waste treatment site will take this soil and an inert landfill may make a commercial decision to only take it under some circumstances.

2 The re-use of soils containing asbestos at concentrations above hazardous waste is likely to meet with regulatory opposition. Assuming a suitable strategy could be agreed this would take a considerable amount of time and is only likely to be warranted where there a long program for implementation.

APPENDIX B

Exploratory Hole Logs

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
PL01
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** TP
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:25
CLIENT:	MODULEK	**DATES:**	30/03/26 - 30/03/26

Logged	Checked
JL	JM

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.45			MADE GROUND: Grass over dark brown slightly gravelly slightly clayey SAND with moderate rootlet content. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mudstone, coal, brick, and pottery. (TOPSOIL)
				0.50			MADE GROUND: Tarmacadam.
							End of Trial Pit at 0.50m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Service clearance undertaken by BSL engineer using CAT & Genny.
2. No groundwater encountered.
3. Excavation sides stable.
4. Backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Trial Pit Log

No.
PL02
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** TP
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:25
CLIENT:	MODULEK	**DATES:**	30/03/26 - 30/03/26

Logged	Checked
JL	JM

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
	Depth (m)	Type	Results				
				0.10			MADE GROUND: Tarmacadam.
				0.20			MADE GROUND: Light yellowish brown and grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete, sandstone, and limestone.
							End of Trial Pit at 0.20m

1.0
2.0
3.0
4.0
5.0

Remarks

1. Service clearance undertaken by BSL engineer using CAT & Genny.
2. No groundwater encountered.
3. Excavation sides stable.
4. Backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS01
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:30
CLIENT:	MODULEK	**DATES:** 26/02/26	**Logged** JL / **Checked** JM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.10-0.50	B		0.10			MADE GROUND: Tarmacadam.
								MADE GROUND: Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete and limestone.
		0.50-0.80	B		0.50			MADE GROUND: Brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of brick, concrete, and sandstone.
		0.80-2.00	B		0.80			*Becoming orangish brown from 0.70m bgl.*
								MADE GROUND: Dark brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and rare brick.
		1.20	SPT	N=26 (5,6/6,5,7,8)				
		2.00	SPT	N=9 (1,2/2,2,3,2)				
		3.00	SPT	N=15 (1,0/3,4,4,4)				
					3.50			MADE GROUND: Reddish brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and rare coal.
		4.00	SPT	N≥50 (1,2/50 for 255mm)	3.90			MADE GROUND: Dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, coal, and rare brick.
					4.40			End of Borehole at 4.40m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. No groundwater encountered.
4. Hole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.: **WS02**

Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type:** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale:** 1:30
CLIENT:	MODULEK	**DATES:** 26/02/26	**Logged:** JL / **Checked:** JM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.10-0.40	B		0.10			MADE GROUND: Tarmacadam.
		0.40-1.00	B		0.40			MADE GROUND: Grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete and limestone.
		1.00-1.40	B		1.00			MADE GROUND: Brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of brick, concrete, and sandstone.
		1.20	SPT	N=15 (3,3/4,3,4,4)				
		1.40-2.00	B		1.40			MADE GROUND: Light brown slightly gravelly slightly clayey SAND. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of sandstone, mudstone, and rare brick.
		2.00	SPT	N=7 (4,3/2,2,1,2)				MADE GROUND: Dark grey slightly gravelly slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and rare brick.
					2.20			MADE GROUND: Dark reddish brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
		3.00-4.00	B		3.00			MADE GROUND: Dark grey slightly gravelly slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
		3.00	SPT	N=4 (1,1/1,1,1,1)				
		4.00	SPT	N=22 (5,4/3,4,8,7)	4.00			MADE GROUND: Brown fine to coarse SAND. (REWORKED)
					4.40			MADE GROUND: Dark reddish brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and concrete.
		5.00	SPT	N=44 (10,10/10,11,11,12)				
					5.45			End of Borehole at 5.45m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. No groundwater encountered.
4. Hole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS03
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:30
CLIENT:	MODULEK	**DATES:** 26/02/26	**Logged** JL / **Checked** JM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.30-1.00	B		0.30			MADE GROUND: Grass over dark brown slightly gravelly slightly clayey SAND with moderate rootlet content. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mudstone, coal, brick, and pottery.
								MADE GROUND: Reddish brown slightly sandy clayey GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of mudstone, sandstone, and rare quartz. (REWORKED)
	▽	1.20	SPT	N=23 (3,4/4,6,6,7)				
		1.40-2.00	B		1.40			MADE GROUND: Dark grey slightly gravelly slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
		2.00-2.70	B		2.00			MADE GROUND: Reddish brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mudstone, sandstone, coal, and rare volcanics. (REWORKED)
		2.00	SPT	N=8 (3,3/2,2,2,2)				
		3.00	SPT	N=5 (2,1/1,1,1,2)				
					3.70			MADE GROUND: Yellowish brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and mudstone. (REWORKED)
					3.90			MADE GROUND: Reddish brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mudstone, sandstone, coal, and rare volcanics. (REWORKED)
		4.00	SPT	N=12 (4,3/2,3,3,4)				
		5.00	SPT	N=14 (2,4/4,3,4,3)				
					5.45			End of Borehole at 5.45m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. Groundwater encountered from 1.20m bgl.
4. Hole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS04
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:30
CLIENT:	MODULEK	**DATES:** 26/02/26	**Logged** JL / **Checked** JM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.15-0.50	B		0.15			MADE GROUND: Tarmacadam.
		0.50-1.20	B		0.50			MADE GROUND: Light grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete and limestone.
		1.20-1.70 1.20	B SPT	N=22 (6,6/7,6,4,5)	1.20			MADE GROUND: Reddish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone and rare coal. (REWORKED)
					1.70			MADE GROUND: Dark grey slightly gravelly slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
		2.00-3.50 2.00	B SPT	N=5 (3,2/1,1,2,1)	2.00			MADE GROUND: Reddish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of mudstone and sandstone. (REWORKED)
		3.00	SPT	N=8 (4,3/2,2,2,2)				MADE GROUND: Dark grey slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
		4.00-5.00 4.00	B SPT	N=8 (4,3/2,2,2,2)	3.50			MADE GROUND: Reddish brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mudstone, sandstone, and coal. (REWORKED)
		5.00	SPT	N=14 (3,4/4,3,4,3)				
					5.45			End of Borehole at 5.45m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. No groundwater encountered.
4. Hole backfilled with arisings upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS101
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:30
CLIENT:	MODULEK	**DATES:**	30/03/26

Logged	Checked
JL	JM

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.15-0.40	ES		0.15			MADE GROUND: Tarmacadam.
		0.40-0.70	ES		0.40			MADE GROUND: Light grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete, sandstone, and limestone.
	▽				0.70			MADE GROUND: Greyish brown slightly sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of quartzite, sandstone, coal, and concrete.
								MADE GROUND: Reddish brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of mudstone, sandstone, and coal. (REWORKED)
					1.30			MADE GROUND: Dark grey slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and rare wood. (REWORKED)
					2.50			MADE GROUND: Dark grey slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
					3.00			MADE GROUND: Dark grey slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
					3.60			MADE GROUND: Reddish brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, coal, and rare concrete.
								Becoming slightly gravelly from 4.60m bgl.
					5.00			End of Borehole at 5.00m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL Engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. Groundwater encountered from 0.70m bgl.
4. Installation to 5.00m bgl: 1.00m plain 35mm PVC, 4.00m slotted 35mm PVC upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS102
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:30
CLIENT:	MODULEK	**DATES:** 30/03/26	**Logged** JL / **Checked** JM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.15-0.50	ES		0.15			MADE GROUND: Tarmacadam.
		0.50-1.20	ES		0.50			MADE GROUND: Light grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete, sandstone, and limestone.
								MADE GROUND: Dark brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and brick.
					2.70			
					2.80			MADE GROUND: Light pinkish brown slightly sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone. (REWORKED)
					3.20			MADE GROUND: Dark brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and brick.
								MADE GROUND: Dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, and rare brick.
					3.80			MADE GROUND: Light pinkish brown slightly sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone. (REWORKED)
					4.00			MADE GROUND: Dark brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
					4.60			End of Borehole at 4.60m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL Engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. Groundwater encountered from 4.20m bgl.
4. Installation to 4.60m bgl: 1.00m plain 35mm PVC, 3.60m slotted 35mm PVC upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

BROWNFIELD SOLUTIONS LTD

Borehole Log

Window Sampler No.
WS103
Sheet 1 of 1

PROJECT NO:	C6579	**CO-ORDS:**	**Hole Type** WS
PROJECT NAME:	WREXHAM FC TRAINING GROUND	**LEVEL:**	**Scale** 1:30
CLIENT:	MODULEK	**DATES:** 30/03/26	**Logged** JL / **Checked** JM

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m OD)	Legend	Stratum Description
		0.10-0.60	ES		0.10			MADE GROUND: Tarmacadam.
								MADE GROUND: Light yellowish brown and grey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of concrete, sandstone, and limestone.
		0.60-0.90	ES		0.60			MADE GROUND: Greyish brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub-angular fine to coarse of sandstone and concrete.
					0.90			MADE GROUND: Reddish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone. (REWORKED)
					1.50			MADE GROUND: Dark grey slightly gravelly slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, and coal. (REWORKED)
					2.00			MADE GROUND: Grey and light grey slightly sandy CLAY. Sand is fine to coarse. (REWORKED)
					2.50			MADE GROUND: Dark reddish brown gravelly SAND. Sand is fine to coarse. Gravel is angular to sub-rounded fine to coarse of sandstone, mudstone, coal, rare quartzite, and rare brick.
					5.00			End of Borehole at 5.00m

1.0 2.0 3.0 4.0 5.0 6.0

Remarks

1. Service clearance undertaken by BSL Engineer using CAT & Genny.
2. Hand dug inspection pit to 1.20m bgl.
3. Groundwater encountered from 3.60m bgl.
4. Installation to 5.00m bgl: 1.00m plain 35mm PVC, 4.00m slotted 35mm PVC upon completion.

ES = Environmental Sample
D = Disturbed Sample
B = Bulk Sample
LB = Large Bulk Sample
U = Undisturbed Sample
UT = Undisturbed Thin Wall Sample
SPT = Standard Penetration Test
PID = Photoionization Detector (ppm)
PPM = Part Per Million
HSV = Hand Shear Vane

APPENDIX C

Geotechnical Testing Results

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Brownfield Solutions Ltd

Address William Smith House
173-183 Witton Street
Northwich
Cheshire
CW9 5LP

Contract C6579

Job Number MRN 26012/9
Date of Issue 23 March 2026

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

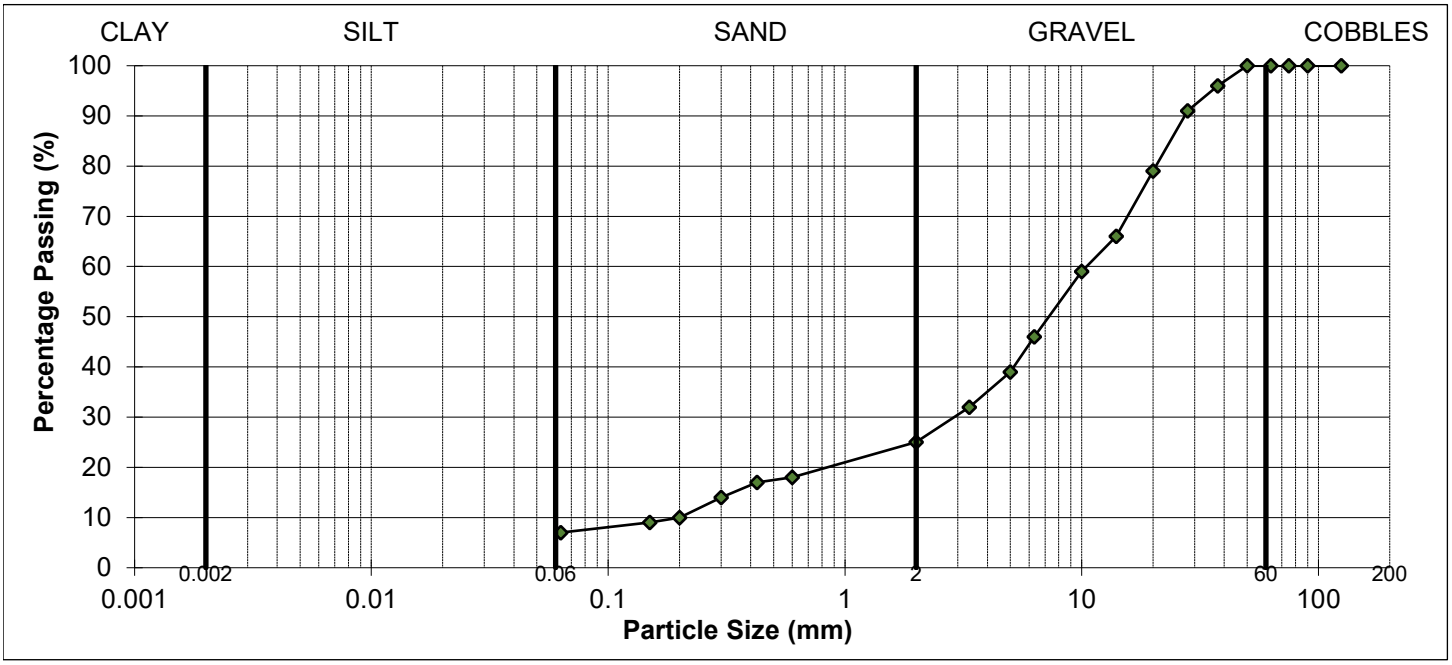
PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	Brownfield Solutions Ltd
SITE	C6579
JOB NUMBER	MRN 26012/9

SAMPLE LABEL	WS01 0.1-0.5m	DATE SAMPLED	26-Feb-26
LAB SAMPLE No	6042701	DATE RECEIVED	03-Mar-26
DATE TESTED	05-Mar-26	SAMPLED BY	Client

MATERIAL	Grey brown silty sandy GRAVEL		
ADVISED SOURCE	Site Won	AS RECEIVED WATER CONTENT (%)	4.2

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		6.3	46	
90	100		5	39	
75	100		3.35	32	
63	100		2	25	
50	100		0.6	18	
37.5	96		0.425	17	
28	91		0.3	14	
20	79		0.2	10	
14	66		0.15	9	
10	59		0.063	7	



SOIL FRACTIONS			
COBBLES	0	SAND	18%
GRAVEL	75%	SILT / CLAY	7%

REMARKS

SIGNED [redacted]

NAME [redacted] BA (Hons) DATE 23-Mar-26
(Director / Head of Laboratory)

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
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UKAS TESTING 1580

TEST CERTIFICATE

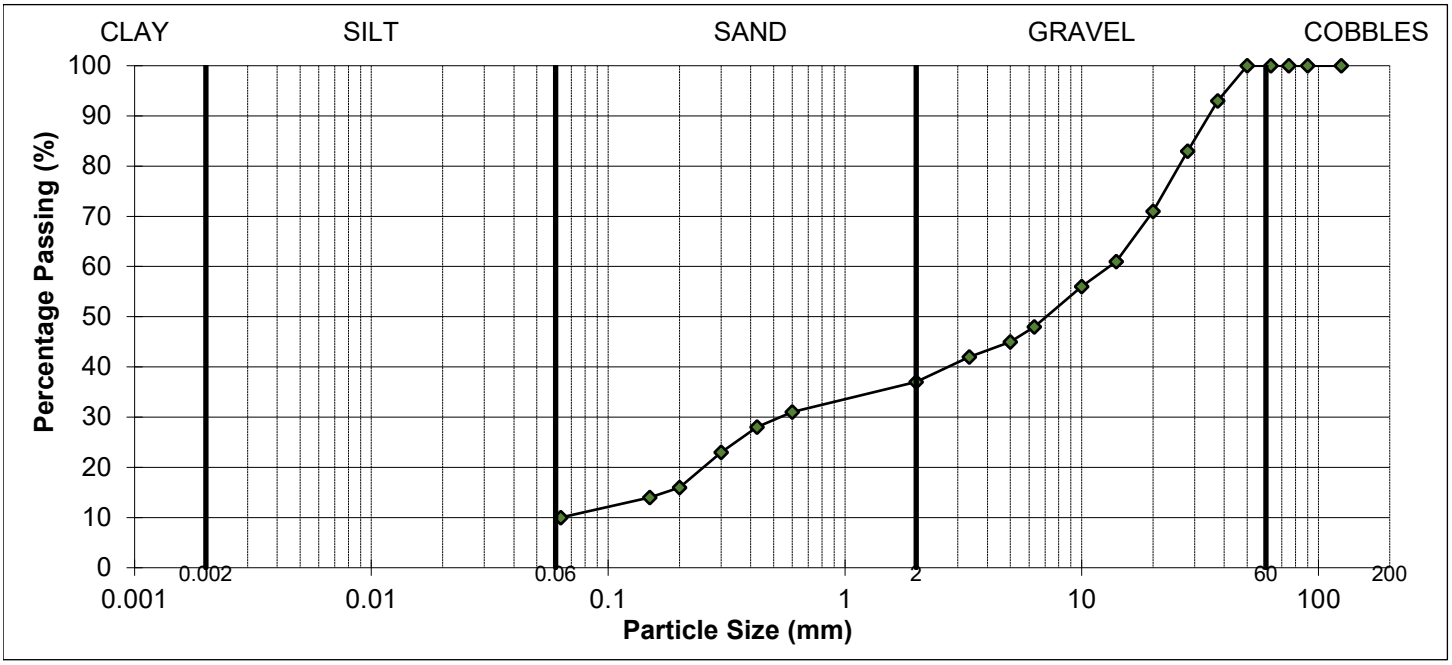
PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	Brownfield Solutions Ltd
SITE	C6579
JOB NUMBER	MRN 26012/9

SAMPLE LABEL	WS04 0.5-1.2m	DATE SAMPLED	26-Feb-26
LAB SAMPLE No	6042702	DATE RECEIVED	03-Mar-26
DATE TESTED	05-Mar-26	SAMPLED BY	Client

MATERIAL	Grey brown silty very sandy GRAVEL		
ADVISED SOURCE	Site Won	AS RECEIVED WATER CONTENT (%)	8.5

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		6.3	48	
90	100		5	45	
75	100		3.35	42	
63	100		2	37	
50	100		0.6	31	
37.5	93		0.425	28	
28	83		0.3	23	
20	71		0.2	16	
14	61		0.15	14	
10	56		0.063	10	



SOIL FRACTIONS			
COBBLES	0	SAND	27%
GRAVEL	63%	SILT / CLAY	10%

REMARKS

SIGNED [redacted]

NAME BA (Hons) DATE 23-Mar-26
(Director / Head of Laboratory)

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
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UKAS TESTING 1580

TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5kg RAMMER
BS 1377-2:2022 Cl.11
PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

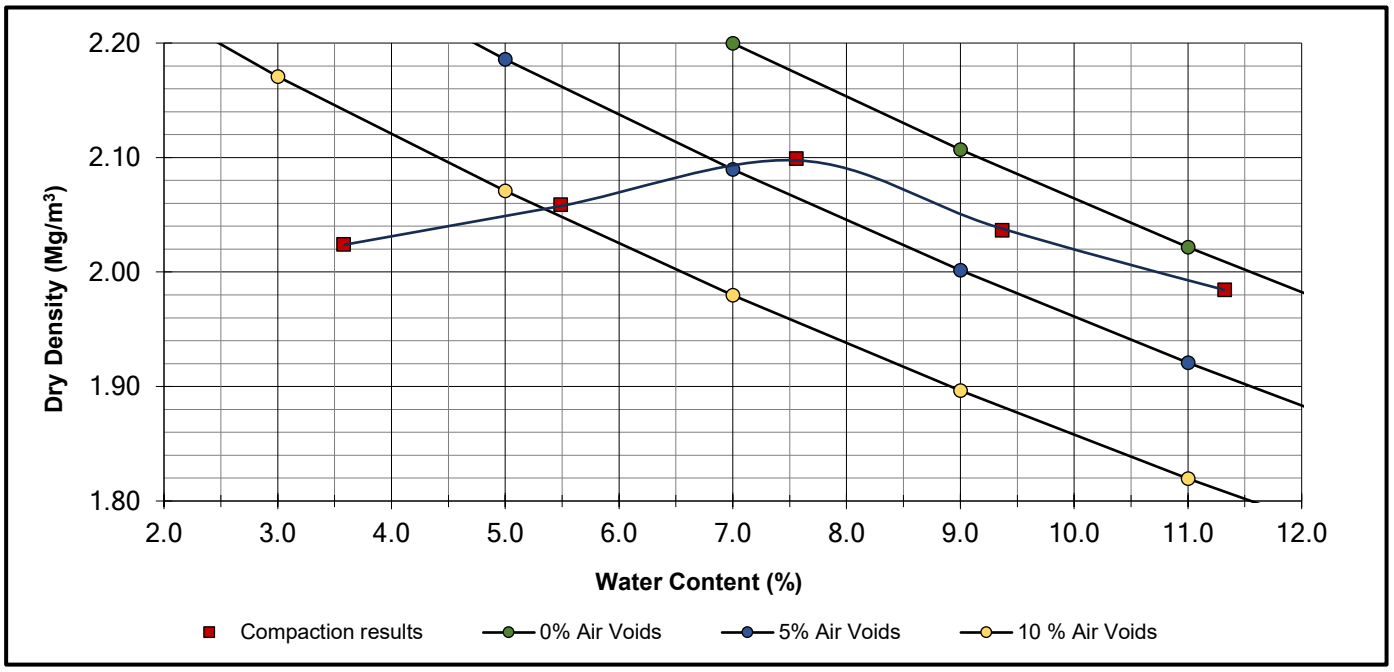
CLIENT	Brownfield Solutions Ltd
SITE	C6579
JOB NUMBER	MRN 26012/9

SAMPLE LABEL	WS02 0.4-1.0m	DATE SAMPLED	26-Feb-26
SAMPLE NUMBER	6042703	DATE RECEIVED	03-Mar-26
DATE TESTED	13-Mar-26	SAMPLED BY	Client

MATERIAL	Grey brown silty sandy GRAVEL
ADVISED SOURCE	Site Won
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	6 %	GRADING ZONE	ZONE 5	MOULD SIZE	CBR
RETAINED 20mm	24 %	PARTICLE DENSITY	2.60 Mg/m3	(Assumed)	

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m^3)
1	3.6	2.024
2	5.5	2.059
3	7.6	2.099
4	9.4	2.036
5	11.3	1.984



OPTIMUM WATER CONTENT	**7.6**	(%)
MAXIMUM DRY DENSITY	**2.10**	(Mg/m^3)

REMARKS

NAME O.P. Davies BA (Hons) SIGNED [redacted] DATE 23-Mar-26
(Director / Head of Laboratory)

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5kg RAMMER
BS 1377-2:2022 Cl.11
PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

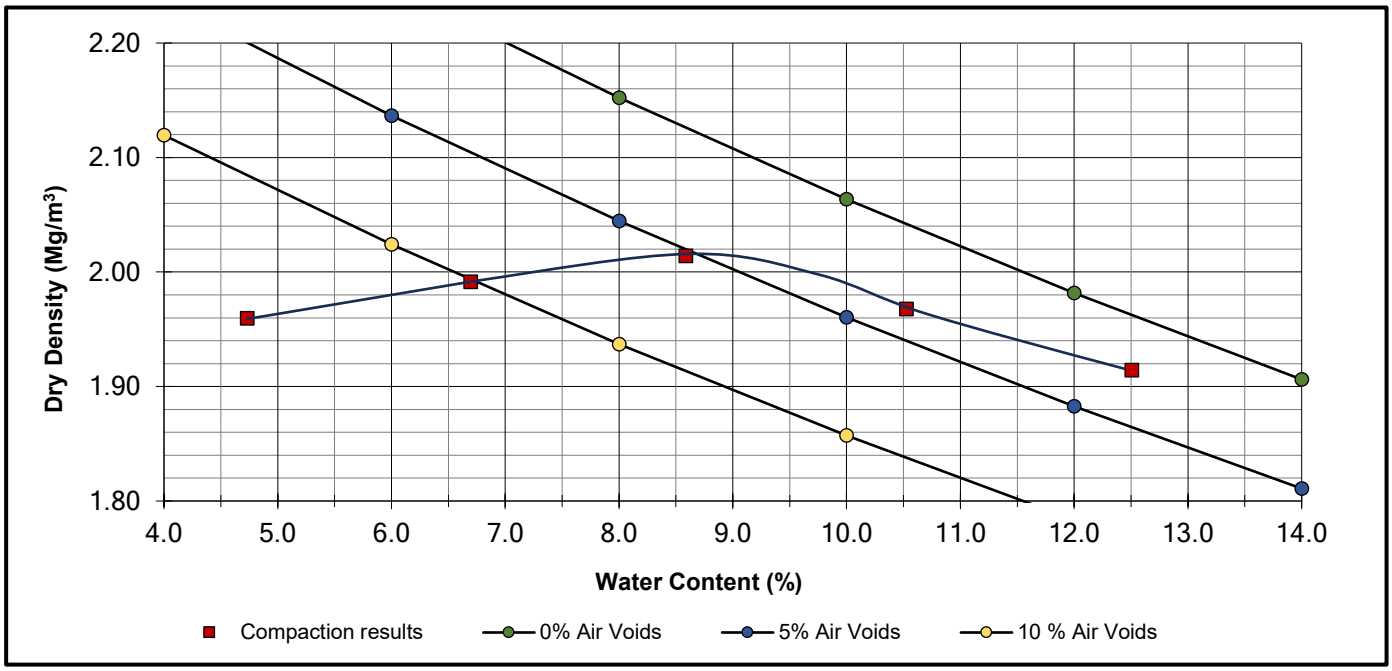
CLIENT	Brownfield Solutions Ltd
SITE	C6579
JOB NUMBER	MRN 26012/9

SAMPLE LABEL	WS03 0.3-1.0m	DATE SAMPLED	26-Feb-26
SAMPLE NUMBER	6042704	DATE RECEIVED	03-Mar-26
DATE TESTED	13-Mar-26	SAMPLED BY	Client

MATERIAL	Grey brown silty sandy GRAVEL
ADVISED SOURCE	Site Won
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	3 %	GRADING ZONE	ZONE 4	MOULD SIZE	CBR
RETAINED 20mm	25 %	PARTICLE DENSITY	2.60 Mg/m3	(Assumed)	

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m^3)
1	4.7	1.960
2	6.7	1.991
3	8.6	2.014
4	10.5	1.968
5	12.5	1.914



OPTIMUM WATER CONTENT	**8.9**	(%)
MAXIMUM DRY DENSITY	**2.02**	(Mg/m^3)

REMARKS

NAME O.P. Davies BA (Hons) SIGNED [redacted] DATE 23-Mar-26
(Director / Head of Laboratory)

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

CALIFORNIA BEARING RATIO (CBR)
BS 1377-2:2022 Cl. 15
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

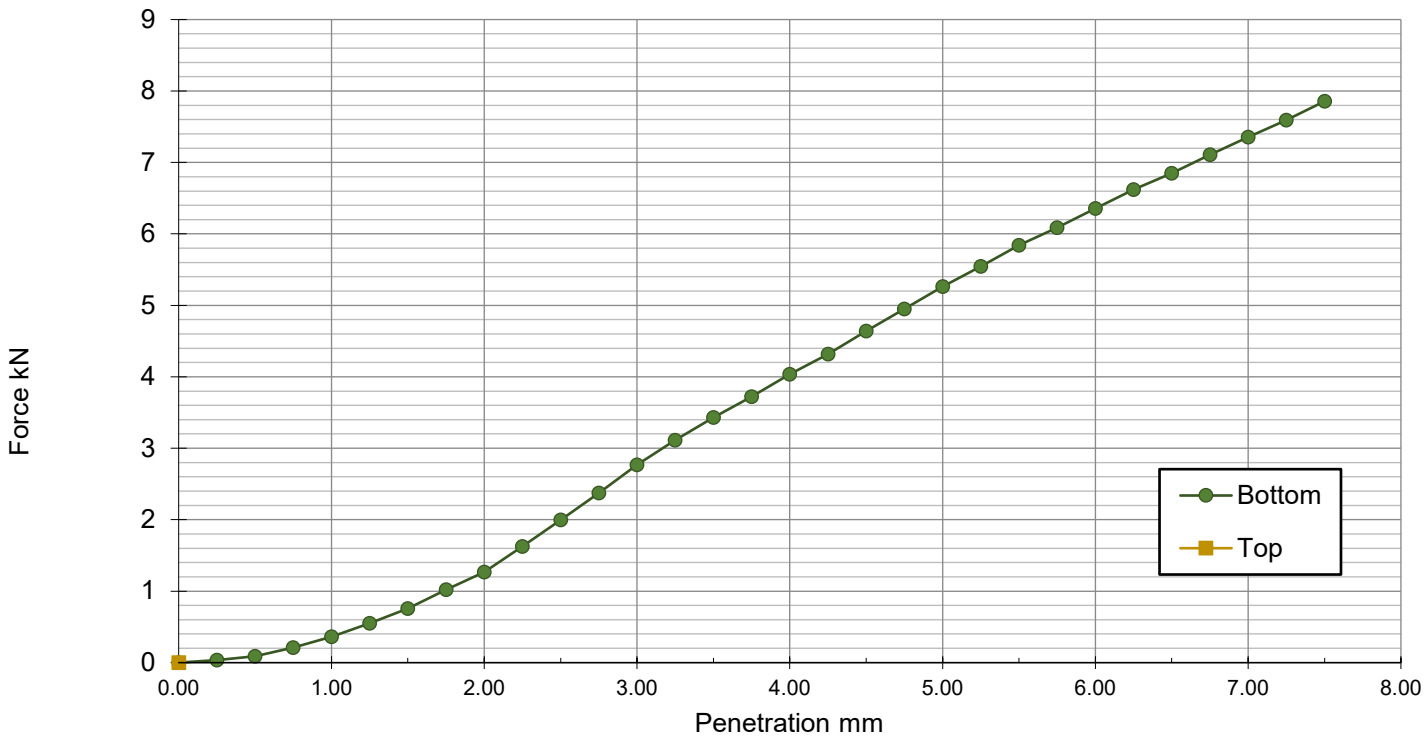
CLIENT	Brownfield Solutions Ltd
SITE	C6579
JOB NUMBER	MRN 26012/9

SAMPLE LABEL	WS01 0.8-2.0m	DATE SAMPLED	26-Feb-26
LAB SAMPLE No	6042705	DATE RECEIVED	03-Mar-26
DATE TESTED	16-Mar-26	SAMPLED BY	Client

MATERIAL	Grey brown silty sandy GRAVEL
ADVISED SOURCE	Site Won

INITIAL CONDITIONS

PRE-TREATMENT		Dynamic Compaction, Specified Effort, Vibrating Hammer			
GREATER THAN 20 mm REMOVED		24 %			
BULK DENSITY	2.00 Mg/m3	WATER CONTENT	14.0 %	DRY DENSITY	1.76 Mg/m3
TEST CONDITION	UNSOAKED	MEASURED SWELL	0 mm	SURCHARGE	2 kg



CBR VALUE			ORIGIN CORRECTION			FINAL MOISTURE CONTENT		
Top	N/A	%	Top	N/A	mm	Top	N/A	%
Bottom	31.8	%	Bottom	1.00	mm	Bottom	14.0	%

REMARKS

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) SIGNED [redacted] DATE 23-Mar-26

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

CALIFORNIA BEARING RATIO (CBR)
BS 1377-2:2022 Cl. 15
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

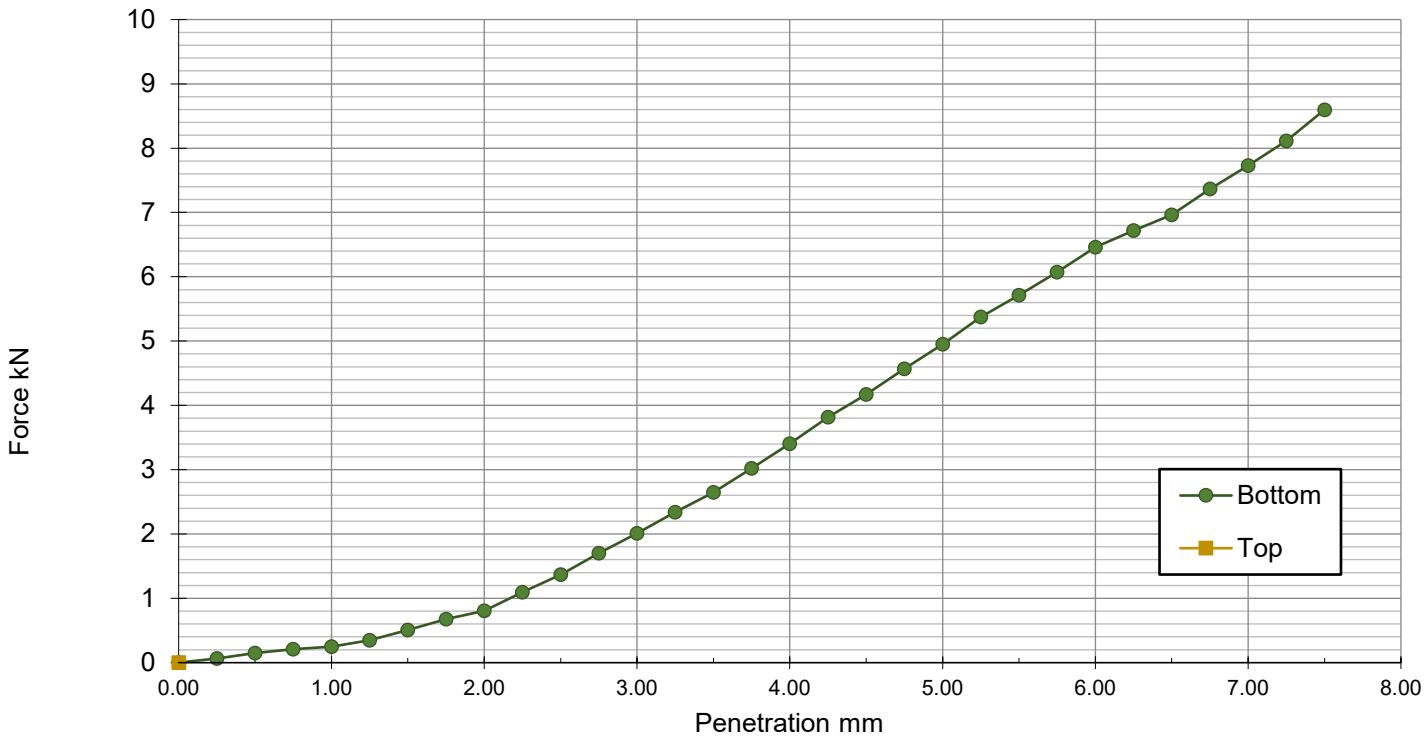
CLIENT	Brownfield Solutions Ltd
SITE	C6579
JOB NUMBER	MRN 26012/9

SAMPLE LABEL	WS04 0.15-0.5m	DATE SAMPLED	26-Feb-26
LAB SAMPLE No	6042706	DATE RECEIVED	03-Mar-26
DATE TESTED	16-Mar-26	SAMPLED BY	Client

MATERIAL	Grey brown silty sandy GRAVEL
ADVISED SOURCE	Site Won

INITIAL CONDITIONS

PRE-TREATMENT		Dynamic Compaction, Specified Effort, Vibrating Hammer			
GREATER THAN 20 mm REMOVED		27 %			
BULK DENSITY	2.09 Mg/m3	WATER CONTENT	3.4 %	DRY DENSITY	2.02 Mg/m3
TEST CONDITION	UNSOAKED	MEASURED SWELL	0 mm	SURCHARGE	2 kg



CBR VALUE

Top	N/A	%
Bottom	24.8	%

ORIGIN CORRECTION

Top	N/A	mm
Bottom	N/A	mm

FINAL MOISTURE CONTENT

Top	N/A	%
Bottom	3.4	%

REMARKS

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) SIGNED [redacted] DATE 23-Mar-26

BROWNFIELD SOLUTIONS

www.brownfield-solutions.com
(+44) 0800 044 8025
info@brownfield-solutions.co.uk

Determination of Equivalent CBR Value by Plate Load Test

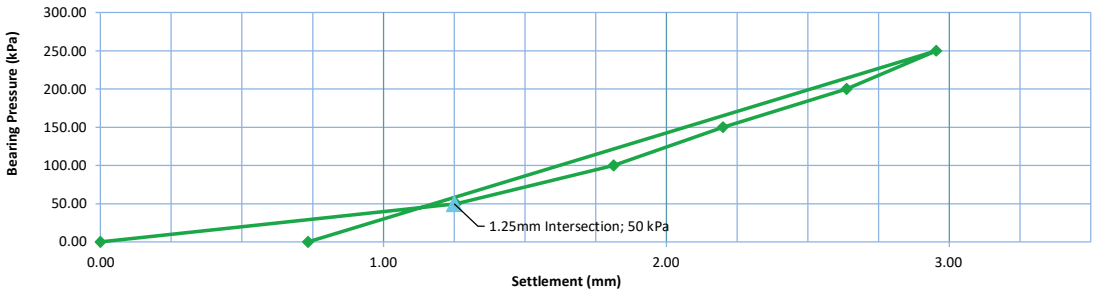
BS1377: Part 9 and IAN 73/06

Client	MODULEK	**Test Position**	**PL01**
Site Name	SITE, LOCATION		
Job Number	C6579	**OS Co-ordinates**	
Date Tested	30/03/2026	**Level (mAOD)**	
Depth (mm)	0.15	**Formation Description:**	MADE GROUND (GRANULAR)

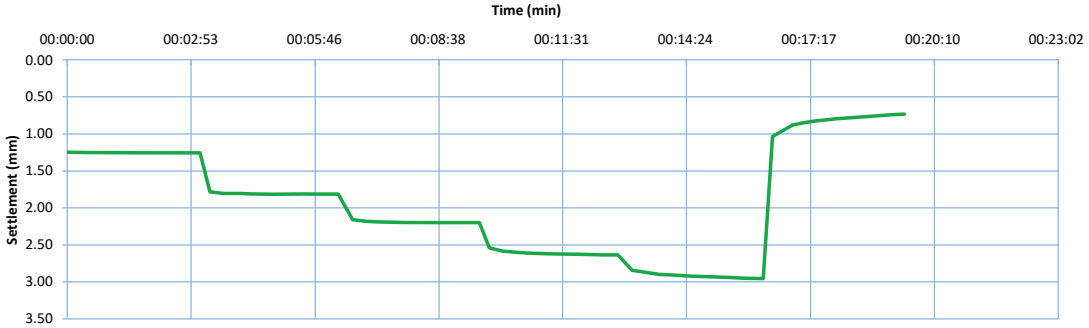
Plate Ø (mm)	450
Plate Area (m^2)	0.159
Max Applied Force (kPa)	250.0
Kentledge	Tracked
Moisture Content (%)	
Max Settlement (mm)	2.953

	Bearing Pressure (kPa)	**Average Plate Settlement (mm)**
Load Phase	0.00	0.00
1	50.00	1.26
2	100.00	1.81
3	150.00	2.20
4	200.00	2.64
5	250.00	2.95
Unload	0.00	0.73

Load vs Settlement Data



Time vs Settlement Data



Settlement required for CBR Value 1.25mm

Load at 1.25mm settlement (kPa)	50
k (Modulus of subgrade reaction $KN/m^2/mm$)	39.8
k_{762} (Modulus of subgrade reaction $KN/m^2/mm$)	24.7
Equivalent CBR Value (%)	**2.5**

Tester: TW **Checked By:** JM

Date Checked: 30/03/2026 **Signature:** [redacted]

BROWNFIELD SOLUTIONS

www.brownfield-solutions.com
(+44) 0800 044 8025
info@brownfield-solutions.co.uk

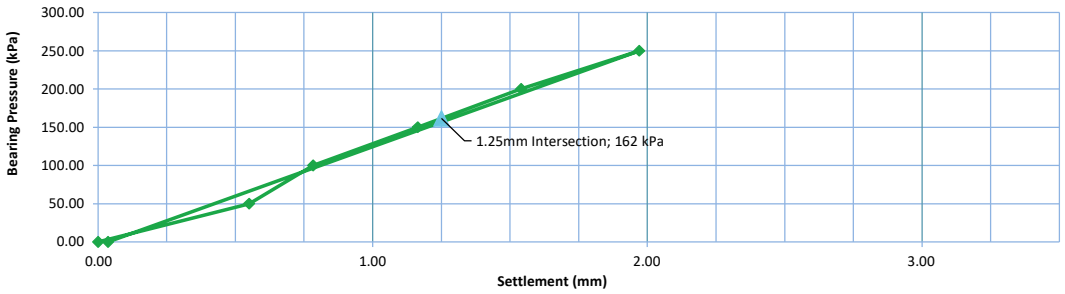
Determination of Equivalent CBR Value by Plate Load Test

BS1377: Part 9 and IAN 73/06

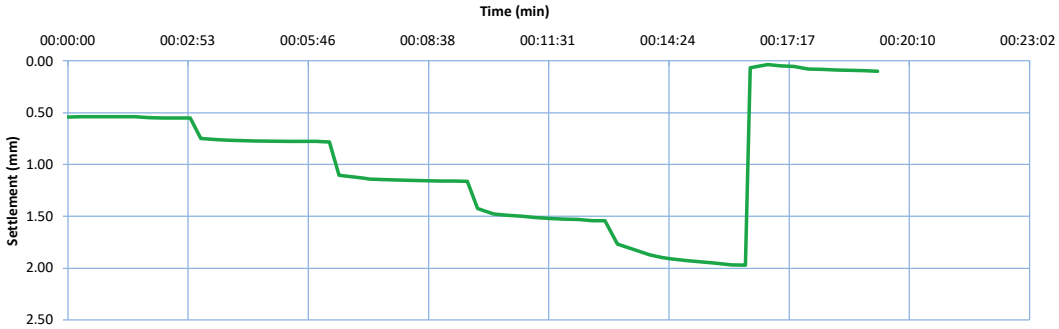
Client	MODULEK	**Test Position**	**PL02**
Site Name	SITE, LOCATION		
Job Number	C6579	**OS Co-ordinates**	
Date Tested	30/03/2026	**Level (mAOD)**	
Depth (mm)	0.15	**Formation Description:**	MADE GROUND (GRANULAR)

			Bearing Pressure (kPa)	Average Plate Settlement (mm)
Plate Ø (mm)	450			
Plate Area (m^2)	0.159	**Load Phase**	0.00	0.00
Max Applied Force (kPa)	250.0	**1**	50.00	0.55
Kentledge	Tracked	**2**	100.00	0.78
Moisture Content (%)		**3**	150.00	1.16
Max Settlement (mm)	1.970	**4**	200.00	1.54
		5	250.00	1.97
		Unload	0.00	0.04

Load vs Settlement Data



Time vs Settlement Data



Settlement required for CBR Value 1.25mm

Load at 1.25mm settlement (kPa)	162
k (Modulus of subgrade reaction $KN/m^2/mm$)	129.2
k_{762} (Modulus of subgrade reaction $KN/m^2/mm$)	80.3
Equivalent CBR Value (%)	**19.3**

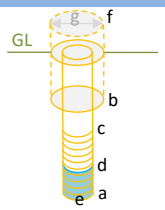
Tester: TW **Checked By:** JM

Date Checked: 15/04/2026 **Signature:** [redacted]

Falling Head Permeability Test	MODULEK	Date of Test: 31/03/2026
	WREXHAM FC TRAINING GROUND	Logged By: JL
WS103	C6579	Checked By: JM

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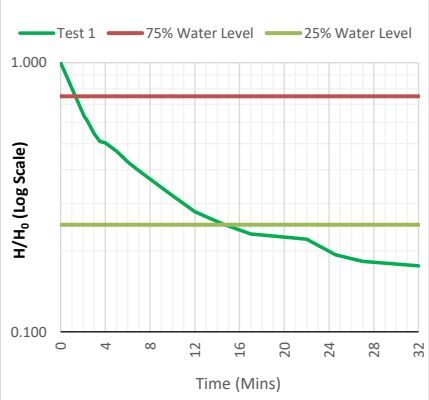
Dimensions (mm)	Test 1	Test 2	Test 3
Bottom of Borehole (a)	5000		
Bottom of Casing (b)			
Top of Filter Material (c)	1000		
Initial Groundwater Level or Base of Hole (d)	4780		
Centre of Piezometer Tip (e)			
Height of Casing/Standpipe Above Surface (f)			
Diameter of Casing/Standpipe (g)	100		
Length of Filter (above GW table/base of hole)	3780		



Site Recorded Data

Test 1				Test 2				Test 3			
Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0	Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0	Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0
0.00	1880	2900	1.000								
2.00	2900	1880	0.648								
2.15	2960	1820	0.628								
2.33	3000	1780	0.614								
2.66	3100	1680	0.579								
3.00	3200	1580	0.545								
3.50	3300	1480	0.510								
4.00	3320	1460	0.503								
5.00	3420	1360	0.469								
6.00	3540	1240	0.428								
7.00	3630	1150	0.397								
10.00	3850	930	0.321								
12.00	3970	810	0.279								
14.50	4050	730	0.252								
17.00	4110	670	0.231								
22.00	4140	640	0.221								
24.58	4220	560	0.193								
27.00	4250	530	0.183								
32.00	4270	510	0.176								

Data Analysis



Falling Head Permeability Test	MODULEK	Date of Test: 31/03/2026	BROWNFIELD SOLUTIONS LTD
	WREXHAM FC TRAINING GROUND	Logged By: JL	
WS103	C6579	Checked By: JM	

Calculation of Intake Factor (F)

		Test 1	Test 2	Test 3
m^2	Cross sectional area of base	0.008		
m	Diameter	0.100		
m	Length	3.780		
	Intake Factor Scenario	Soil flush with bottom in uniform soil		
	Intake Factor, F	**0.275**	-	-

Soil Infiltration Rate Calculation

		Test 1	Test 2	Test 3
75% Effective Level	Head (m)	2.175		
	Depth to water (m bgl)	2.605		
	Time (mins)	1		
	Time (sec)	60		
25% effective Level	Head (m)	0.725		
	Depth to water (m bgl)	4.055		
	Time (mins)	14		
	Time (sec)	840		
m (bgl)	Initial groundwater level	4.78		
m (bgl)	At time (t_1) Depth to water	2.605		
seconds	t_1	90		
m (bgl)	Depth of water H_1	2.175		
m (bgl)	At time (t_2) Depth to water	4.055		
seconds	t_2	870		
m (bgl)	Depth of water H_2	0.725		

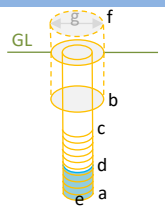
$$Permeability = k = \frac{A}{F(t_2 - t_1)} Log_e \frac{H_1}{H_2}$$

	Test 1	Test 2	Test 3
Permeability, k (m/s)	**4.02E-05**	-	-

Falling Head Permeability Test	MODULEK	Date of Test: 31/03/2026
	WREXHAM FC TRAINING GROUND	Logged By: JL
WS102	C6579	Checked By: JM

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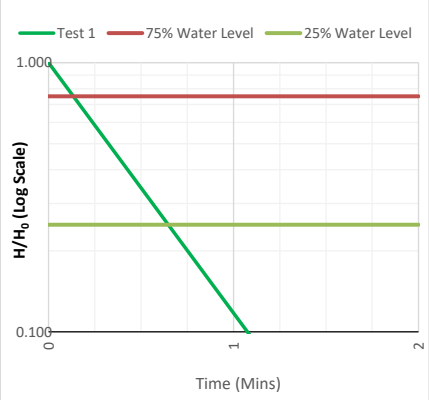
Dimensions (mm)	Test 1	Test 2	Test 3
Bottom of Borehole (a)	5000		
Bottom of Casing (b)			
Top of Filter Material (c)	1000		
Initial Groundwater Level or Base of Hole (d)	4540		
Centre of Piezometer Tip (e)			
Height of Casing/Standpipe Above Surface (f)			
Diameter of Casing/Standpipe (g)	100		
Length of Filter (above GW table/base of hole)	3540		



Site Recorded Data

Test 1				Test 2				Test 3			
Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0	Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0	Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0
0.00	1640	2900	1.000								
2.00	4500	40	0.014								

Data Analysis



Falling Head Permeability Test	MODULEK	Date of Test: 31/03/2026	BROWNFIELD SOLUTIONS LTD
	WREXHAM FC TRAINING GROUND	Logged By: JL	
WS102	C6579	Checked By: JM	

Calculation of Intake Factor (F)

		Test 1	Test 2	Test 3
m^2	Cross sectional area of base	0.008		
m	Diameter	0.100		
m	Length	3.540		
	Intake Factor Scenario	Soil flush with bottom in uniform soil		
	Intake Factor, F	**0.275**	-	-

Soil Infiltration Rate Calculation

		Test 1	Test 2	Test 3
75% Effective Level	Head (m)	2.175		
	Depth to water (m bgl)	2.365		
	Time (mins)	0		
	Time (sec)	0		
25% effective Level	Head (m)	0.725		
	Depth to water (m bgl)	3.815		
	Time (mins)	1		
	Time (sec)	60		
m (bgl)	Initial groundwater level	4.54		
m (bgl)	At time (t_1) Depth to water	2.365		
seconds	t_1	7		
m (bgl)	Depth of water H_1	2.175		
m (bgl)	At time (t_2) Depth to water	3.815		
seconds	t_2	37		
m (bgl)	Depth of water H_2	0.725		

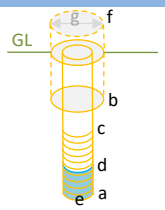
$$Permeability = k = \frac{A}{F(t_2 - t_1)} Log_e \frac{H_1}{H_2}$$

	Test 1	Test 2	Test 3
Permeability, k (m/s)	**1.05E-03**	-	-

Falling Head Permeability Test	MODULEK	Date of Test: 31/03/2026
	WREXHAM FC TRAINING GROUND	Logged By: JL
WS101	C6579	Checked By: JM

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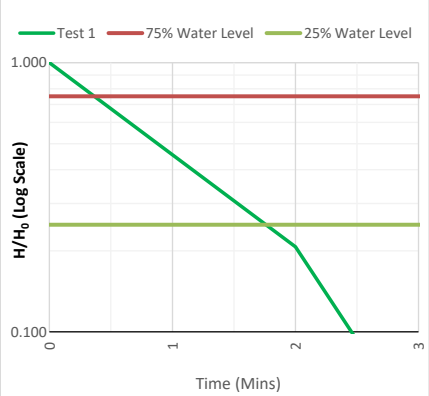
Dimensions (mm)	Test 1	Test 2	Test 3
Bottom of Borehole (a)	5000		
Bottom of Casing (b)			
Top of Filter Material (c)	1000		
Initial Groundwater Level or Base of Hole (d)	4700		
Centre of Piezometer Tip (e)			
Height of Casing/Standpipe Above Surface (f)			
Diameter of Casing/Standpipe (g)	100		
Length of Filter (above GW table/base of hole)	3700		



Site Recorded Data

Test 1				Test 2				Test 3			
Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0	Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0	Time (mins)	Depth to water (mm)	Head of water (mm)	Head Ratio H/H_0
0.00	1800	2900	1.000								
2.00	4100	600	0.207								
2.50	4430	270	0.093								
3.00	4500	200	0.069								
4.00	4550	150	0.052								
5.00	4610	90	0.031								
6.00	4640	60	0.021								
7.00	4670	30	0.010								
8.00	4700	0	0.000								

Data Analysis



Falling Head Permeability Test	MODULEK	Date of Test: 31/03/2026	BROWNFIELD SOLUTIONS LTD
	WREXHAM FC TRAINING GROUND	Logged By: JL	
WS101	C6579	Checked By: JM	

Calculation of Intake Factor (F)

		Test 1	Test 2	Test 3
m^2	Cross sectional area of base	0.008		
m	Diameter	0.100		
m	Length	3.700		
	Intake Factor Scenario	Soil flush with bottom in uniform soil		
	Intake Factor, F	**0.275**	-	-

Soil Infiltration Rate Calculation

		Test 1	Test 2	Test 3
75% Effective Level	Head (m)	2.175		
	Depth to water (m bgl)	2.525		
	Time (mins)	1		
	Time (sec)	30		
25% effective Level	Head (m)	0.725		
	Depth to water (m bgl)	3.975		
	Time (mins)	2		
	Time (sec)	90		
m (bgl)	Initial groundwater level	4.70		
m (bgl)	At time (t_1) Depth to water	2.525		
seconds	t_1	40		
m (bgl)	Depth of water H_1	2.175		
m (bgl)	At time (t_2) Depth to water	3.975		
seconds	t_2	105		
m (bgl)	Depth of water H_2	0.725		

$$Permeability = k = \frac{A}{F(t_2 - t_1)} Log_e \frac{H_1}{H_2}$$

	Test 1	Test 2	Test 3
Permeability, k (m/s)	**4.83E-04**	-	-

APPENDIX D

Chemical Testing Results

ANALYTICAL TEST REPORT

Report Number	26-03891, issue number 1
Contract name:	C6579/Wrexham FC Training Ground
Client reference:	C6579
Clients name:	Brownfield Solutions Ltd
Clients address:	Brownfield Solutions Ltd 173-183 Witton Street Northwich Cheshire CW9 5LP
Samples received:	02/04/2026
Analysis started:	02/04/2026
Analysis completed:	13/04/2026
Report issued:	13/04/2026

Key

U UKAS accredited test
M MCERTS & UKAS accredited test
(B) Analysis performed at Southampton Site
I/S Insufficient sample to carry out test
U/S Sample not suitable for testing
NAD No Asbestos Detected
Full key available on Information page

[redacted]

Approved by: Rachael Burton
Technical Support Manager

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
% Moisture reported as MCERTS drying at 30°C

Lab ref	Sample ID	Depth (m)	Sample description	Material removed	% Removed	% Moisture
98691	WS101	0.15 - 0.4	Beige Loamy Sand with Vegetation and Stones.	-	-	5.0
98692	WS102	0.15 - 0.5	Black Loamy Sand with Vegetation and Stones.	-	-	3.8
98693	WS102	0.5 - 1.2	Brown Clay loamy sand with Vegetation and Stones.	-	-	9.8
98694	WS103	0.1 - 0.6	Black Sand with Vegetation and Stones.	-	-	2.1

SOILS

Lab Number					98691	98692	98693	98694
Client Reference					SOIL	SOIL	SOIL	SOIL
Sample ID					WS101	WS102	WS102	WS103
Depth (m)					0.15 - 0.4	0.15 - 0.5	0.5 - 1.2	0.1 - 0.6
Sampling Date					30/03/2026	30/03/2026	30/03/2026	30/03/2026
Test	**Method**	**Accred**	**LoD**	**Units**				
Asbestos								
Asbestos Identification	SUBCON	SU	0	-	NAD	NAD	n/t	NAD
Asbestos sample description	SUBCON	SN	0	-	-	-	n/t	-
Soil sample preparation parameters								
Stones Content	CE001	N	0.1	%	< 0.1	< 0.1	< 0.1	< 0.1
Metals								
Water Soluble Sulphate	CE061	M	10	mg/l	31.0	42.1	1890	137
Arsenic	CE264	M	2.3	mg/kg	< 2.3	3.1	16.4	2.9
Cadmium	CE264	M	1.1	mg/kg	< 1.1	< 1.1	< 1.1	< 1.1
Chromium	CE264	U	1.3	mg/kg	2.7	8.3	16.2	32.8
Copper	CE264	M	1.2	mg/kg	2.4	8.3	23.9	35.1
Lead	CE264	U	2.4	mg/kg	219	63.3	63.9	7.0
Mercury	CE264	M	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Nickel	CE264	M	1.6	mg/kg	< 1.6	4.8	21.8	24.6
Selenium	CE264	M	3	mg/kg	< 3.0	< 3.0	< 3.0	< 3.0
Zinc	CE264	M	2.4	mg/kg	17.7	81.0	56.3	43.5
PCB (ICES 7 congeners)								
Total PCBs (7 congeners)	CE137	M	0.035	mg/kg	n/t	n/t	n/t	< 0.035
PCB 101	CE137	M	0.015	mg/kg	n/t	n/t	n/t	< 0.015
PCB 118	CE137	M	0.015	mg/kg	n/t	n/t	n/t	< 0.015
PCB 138	CE137	M	0.015	mg/kg	n/t	n/t	n/t	< 0.015
PCB 153	CE137	M	0.01	mg/kg	n/t	n/t	n/t	< 0.010
PCB 180	CE137	M	0.01	mg/kg	n/t	n/t	n/t	< 0.010
PCB 28	CE137	M	0.015	mg/kg	n/t	n/t	n/t	< 0.015
PCB 52	CE137	M	0.01	mg/kg	n/t	n/t	n/t	< 0.010
Colourimetric								
Water Soluble Chromium VI	CE263	N	0.04	mg/kg	< 0.040	< 0.040	< 0.040	< 0.040
Chromium III	CE208	N	2	mg/kg	2.71	8.27	16.2	32.8
Combustion								
Moisture Content	CE001	N	0.1	%	5.0	3.8	9.8	2.1

SOILS

Lab Number					98691	98692	98693	98694
Client Reference					SOIL	SOIL	SOIL	SOIL
Sample ID					WS101	WS102	WS102	WS103
Depth (m)					0.15 - 0.4	0.15 - 0.5	0.5 - 1.2	0.1 - 0.6
Sampling Date					30/03/2026	30/03/2026	30/03/2026	30/03/2026
Test	**Method**	**Accred**	**LoD**	**Units**				
Total Organic Carbon	CE197	M	0.1	%	n/t	n/t	n/t	2.12
Loss on Ignition	CE006	U	0.1	%	n/t	n/t	n/t	2.57
Soil Organic Matter	CE192	N	0.1	%	0.90	2.98	9.86	3.66
Polyaromatic hydrocarbons								
Naphthalene	CE087	M	0.016	mg/kg	< 0.016	0.039	0.285	< 0.016
Acenaphthylene	CE087	M	0.015	mg/kg	< 0.015	< 0.015	< 0.015	< 0.015
Acenaphthene	CE087	M	0.013	mg/kg	< 0.013	< 0.013	< 0.013	< 0.013
Fluorene	CE087	U	0.013	mg/kg	< 0.013	< 0.013	0.015	< 0.013
Phenanthrene	CE087	M	0.014	mg/kg	0.016	0.106	1.47	0.056
Anthracene	CE087	U	0.017	mg/kg	< 0.017	0.033	0.120	0.018
Fluoranthene	CE087	M	0.017	mg/kg	< 0.017	0.136	0.281	0.041
Pyrene	CE087	M	0.016	mg/kg	< 0.016	0.130	0.187	0.098
Benzo(a)anthracene	CE087	U	0.012	mg/kg	< 0.012	0.077	0.087	0.036
Chrysene	CE087	M	0.028	mg/kg	< 0.028	0.056	0.095	0.064
Benzo(b)fluoranthene	CE087	M	0.02	mg/kg	< 0.020	0.150	0.071	0.103
Benzo(k)fluoranthene	CE087	M	0.025	mg/kg	< 0.025	0.048	< 0.025	< 0.025
Benzo(a)pyrene	CE087	U	0.019	mg/kg	< 0.019	0.113	0.051	0.075
Indeno(1,2,3-cd)pyrene	CE087	M	0.019	mg/kg	< 0.019	0.145	0.039	0.079
Dibenzo(a,h)anthracene	CE087	M	0.017	mg/kg	< 0.017	0.042	< 0.017	0.044
Benzo(g,h,i)perylene	CE087	M	0.019	mg/kg	0.033	0.171	0.041	0.123
Coronene	CE087	N	0.02	mg/kg	n/t	n/t	n/t	< 0.020
Total PAH(16)	CE087	N	0.28	mg/kg	< 0.280	1.24	2.75	0.736
Total PAH(17)	CE087	N	0.3	mg/kg	n/t	n/t	n/t	0.736
BTEX								
Benzene	CE267	U	0.001	mg/kg	< 0.001	< 0.001	n/t	< 0.001
Toluene	CE267	U	0.001	mg/kg	< 0.001	< 0.001	n/t	< 0.001
Ethylbenzene	CE267	U	0.001	mg/kg	< 0.001	< 0.001	n/t	< 0.001
Xylenes	CE267	N	0.004	mg/kg	n/t	n/t	n/t	< 0.004
MTBE	CE267	N	0.002	mg/kg	< 0.002	< 0.002	n/t	< 0.002
Total BTEX	CE267	N	0.007	mg/kg	n/t	n/t	n/t	< 0.007

SOILS

Lab Number					98691	98692	98693	98694
Client Reference					SOIL	SOIL	SOIL	SOIL
Sample ID					WS101	WS102	WS102	WS103
Depth (m)					0.15 - 0.4	0.15 - 0.5	0.5 - 1.2	0.1 - 0.6
Sampling Date					30/03/2026	30/03/2026	30/03/2026	30/03/2026
Test	**Method**	**Accred**	**LoD**	**Units**				
m,p-Xylene	CE267	U	0.002	mg/kg	< 0.002	< 0.002	n/t	< 0.002
oXylenes	CE267	U	0.002	mg/kg	< 0.002	< 0.002	n/t	< 0.002
Total Petroleum Hydrocarbons								
>C5-C6 Aliphatic (HS_1D_AL)	CE267	N	0.1	mg/kg	< 0.10	< 0.10	n/t	< 0.10
>C6-C8 Aliphatic (HS_1D_AL)	CE267	N	0.1	mg/kg	< 0.10	< 0.10	n/t	< 0.10
>C8-C10 Aliphatic (HS_1D_AL)	CE267	N	0.1	mg/kg	< 0.10	< 0.10	n/t	< 0.10
>C10-C12 Aliphatic (EH_2D_AL)	CE250	N	1	mg/kg	1.9	2.3	n/t	2.7
>C12-C16 Aliphatic (EH_2D_AL)	CE250	N	0.5	mg/kg	1.6	2.3	n/t	2.7
>C16-C21 Aliphatic (EH_2D_AL)	CE250	N	0.7	mg/kg	1.1	2.9	n/t	4.8
>C21-C35 Aliphatic (EH_2D_AL)	CE250	N	4	mg/kg	28.5	44.9	n/t	202
>C35-C44 Aliphatic (EH_2D_AL)	CE250	N	0.5	mg/kg	24.6	17.5	n/t	193
>C5-C7 Aromatic (HS_1D_AR)	CE267	N	0.01	mg/kg	< 0.010	< 0.010	n/t	< 0.010
>C7-C8 Aromatic (HS_1D_AR)	CE267	N	0.01	mg/kg	< 0.010	< 0.010	n/t	< 0.010
>C8-C10 Aromatic (HS_1D_AR)	CE267	N	0.01	mg/kg	< 0.010	< 0.010	n/t	< 0.010
>C10-C12 Aromatic (EH_2D_AR)	CE250	N	0.6	mg/kg	5.1	7.2	n/t	8.6
>C12-C16 Aromatic (EH_2D_AR)	CE250	N	1	mg/kg	14.4	19.2	n/t	23.0
>C16-C21 Aromatic (EH_2D_AR)	CE250	N	2	mg/kg	10.3	14.7	n/t	19.4
>C21-C35 Aromatic (EH_2D_AR)	CE250	N	4.5	mg/kg	119	313	n/t	718
>C35-C44 Aromatic (EH_2D_AR)	CE250	N	2	mg/kg	47.2	171	n/t	636
Mineral Oil (>C10-C40 Total) (EH_CU_1D_Total)	CE162	N	19	mg/kg	n/t	n/t	n/t	1310
Wet Chem								
pH	CE004	M	0.1	pH units	9.2	8.5	7.4	9.4
Acid Neutralisation Capacity pH4	CE083	N	0.02	mol/kg	n/t	n/t	n/t	3.49
Acid Neutralisation Capacity pH7	CE083	N	0.02	mol/kg	n/t	n/t	n/t	0.210

LEACHATE

Lab Number					98694
Client Reference					SOIL
Sample ID					WS103
Depth (m)					0.1 - 0.6
Sampling Date					30/03/2026
Test	**Method**	**Accred**	**LoD**	**Units**	
Metals					
Arsenic 10:1	CE265	N	0.1	µg/l	0.332
Barium 10:1	CE265	N	0.9	µg/l	13.3
Cadmium 10:1	CE265	N	0.1	µg/l	< 0.100
Chromium 10:1	CE265	N	0.5	µg/l	< 0.500
Copper 10:1	CE265	N	0.6	µg/l	1.64
Mercury 10:1	CE265	N	0.05	µg/l	< 0.050
Molybdenum 10:1	CE265	N	0.9	µg/l	1.07
Nickel 10:1	CE265	N	0.4	µg/l	< 0.400
Lead 10:1	CE265	N	0.6	µg/l	< 0.600
Antimony 10:1	CE265	N	0.8	µg/l	< 0.800
Selenium 10:1	CE265	N	1.1	µg/l	< 1.10
Zinc 10:1	CE265	N	3	µg/l	< 3.00
Arsenic 10:1	CE265	N	0.001	mg/kg	0.003
Barium 10:1	CE265	N	0.009	mg/kg	0.133
Cadmium 10:1	CE265	N	0.001	mg/kg	< 0.001
Chromium 10:1	CE265	N	0.005	mg/kg	< 0.005
Copper 10:1	CE265	N	0.006	mg/kg	0.016
Mercury 10:1	CE265	N	0.0005	mg/kg	< 0.0005
Molybdenum 10:1	CE265	N	0.009	mg/kg	0.011
Nickel 10:1	CE265	N	0.004	mg/kg	< 0.004
Lead 10:1	CE265	N	0.006	mg/kg	< 0.006
Antimony 10:1	CE265	N	0.008	mg/kg	< 0.008
Selenium 10:1	CE265	N	0.011	mg/kg	< 0.011
Zinc 10:1	CE265	N	0.03	mg/kg	< 0.03
Colourimetric					
Chloride 10:1	CE257	N	0.4	mg/l	< 0.40
Fluoride 10:1	CE257	N	0.08	mg/l	< 0.080
Sulphate 10:1	CE257	N	0.3	mg/l	3.00
Phenol Index 10:1	CE148	N	0.01	mg/l	< 0.01

LEACHATE

Lab Number					98694
Client Reference					SOIL
Sample ID					WS103
Depth (m)					0.1 - 0.6
Sampling Date					30/03/2026
Test	**Method**	**Accred**	**LoD**	**Units**	
Chloride 10:1	CE257	N	4	mg/kg	< 4.0
Fluoride 10:1	CE257	N	0.8	mg/kg	< 0.80
Sulphate 10:1	CE257	N	3	mg/kg	30.0
Phenol Index 10:1	CE148	N	0.1	mg/kg	< 0.10
Combustion					
Total Dissolved Solids 10:1	CE039	N	10	mg/l	141
Dissolved Organic Carbon 10:1	CE247	N	0.85	mg/l	1.34
Total Dissolved Solids 10:1	CE039	N	100	mg/kg	1410
Dissolved Organic Carbon 10:1	CE247	N	8.5	mg/kg	13.4
Wet Chem					
Temperature 10:1	CE002	N	0	°C	20
pH 10:1	CE213	N	0	pH units	10.3
Conductivity 10:1	CE214	N	50	µS/cm	185
Dry mass of test portion	CE002	N	0	kg	0.089
Wet Sample Mass Taken (Actual)	CE002	N	0	kg	0.091
Dry Matter 10:1	CE002	N	0.1	%	97.9
Moisture Content 10:1	CE001	N	0.1	%	2.2
Eluent Volume	CE002	N	0	l	0.889

WAC Analysis

Lab Ref:	98694			**Landfill Waste Acceptance Criteria Limits**		
Job Number:	26-03891			**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample Date:	30/03/2026					
Sample ID:	WS103					
Depth (m)	0.1 - 0.6					
Site:	C6579/Wrexham FC Training Ground					
Determinand	**Code**	**Units**				
Total Organic Carbon	MU	%	2.12	3	5	6
Loss on Ignition	U	%	2.57	--	--	10
Total BTEX	N	mg/kg	< 0.007	6	--	--
Total PCBs (7 congeners)	MU	mg/kg	< 0.035	1	--	--
Mineral Oil (>C10-C40 Aliphatic) (EH_CU_1D_AL)	N	mg/kg	1310	500	--	--
Total (of 17) PAHs	N	mg/kg	0.736	100	--	--
pH		pH Units		--	>6	--
Acid Neutralisation Capacity (pH4)	N	mol/kg	3.49	--	To be evaluated	
Acid Neutralisation Capacity (pH7)	N	mol/kg	0.21	--	To be evaluated	
Eluate Analysis		**Conc in Eluate**	**10:1**	**Council Decision 2003/33/EC**		
		10:1	**mg/kg**	**Limit Values mg/kg at L:S 10:1**		
Arsenic (µg/l)	N	0.332	0.003	0.5	2	25
Barium (µg/l)	N	13.3	0.133	20	100	300
Cadmium (µg/l)	N	< 0.100	< 0.001	0.04	1	5
Chromium (µg/l)	N	< 0.500	< 0.005	0.5	10	70
Copper (µg/l)	N	1.64	0.016	2	50	100
Mercury (µg/l)	N	< 0.050	< 0.0005	0.01	0.2	2
Molybdenum (µg/l)	N	1.07	0.011	0.5	10	30
Nickel (µg/l)	N	< 0.400	< 0.004	0.4	10	40
Lead (µg/l)	N	< 0.600	< 0.006	0.5	10	50
Antimony (µg/l)	N	< 0.800	< 0.008	0.06	0.7	5
Selenium (µg/l)	N	< 1.10	< 0.011	0.1	0.5	7
Zinc (µg/l)	N	< 3.00	< 0.03	4	50	200
Chloride (mg/l)	N	< 0.40	< 4.0	800	15000	25000
Fluoride (mg/l)	N	< 0.080	< 0.80	10	150	500
Sulphate (mg/l)	N	3	30	1000	20000	50000
Total Dissolved Solids (mg/l)	N	141	1410	4000	60000	100000
Phenol Index (mg/l)	N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon (mg/l)	N	1.34	13.4	500	800	1000

Leach Test Information

pH	N	10.3
Conductivity (uS/cm)	N	185
Temperature (°C)	N	20
Mass of dried test portion (kg)	N	0.089
Mass of wet test portion (kg)	N	0.091
Dry Matter (%)	N	97.9
Moisture (%)	N	2.2
Material Removed (%)		
Eluent Volume (l)	N	0.889

Disclaimer: The Landfill Waste Acceptance Criteria limits in this report are provided for guidance only and values are transcribed from the Council Decision annex 2003/33/EC

Chemtech Environmental Ltd does not take responsibility for any errors or omissions in the transcription, and all data should be verified by the end user.

Results will be colour flagged to the lowest threshold value breached. Any assessments made are based on the published results from the Laboratory and make no assessment of uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. Interpretation/assessment is outside the scope of the laboratory's UKAS accreditation.
Moisture Content Calculated on Wet Weight Basis

METHOD DETAILS

METHOD	TESTNAME	METHOD SUMMARY	ANALYSIS BASIS
CE267	VPH in Soil	HS-GCFID	As submitted sample
CE250	GCXGC in Soil	DCM Extraction and GCxGC-FID	As submitted sample
SUBCON	Asbestos Soil	HSG248	Air Dried Sample
CE061	W. Sol Metals	ICPOES	Air dried sample
CE001	WAC in leachates 10:1 single stage	BS12457-2	As submitted sample
CE083	Acid Neutralisation Capacity	Titration	Air dried sample
CE002	WAC moistures	Gravimetric	As submitted sample
CE137	PCB's in Soil	DCM Extraction and GCMS	As submitted sample
CE264	Metals by ICP in Soil	ICPOES	Air dried sample
CE267	BTEX in Soils	Analysis by HSGCFID	As submitted sample
CE263	ChromiumVI by Discrete Analyser in Soil	Gallery	Air dried sample
CE087	PAH in Soil	DCM Extraction and GCMS	As submitted sample
CE208	Chromium Hexavalent in Soil	Colorimetry	Air dried sample
CE197	TOC In Soil	PRIMACS Combustion Analyser	Air dried sample
CE006	Loss on ignition at 440 deg C	Gravimetric	Air dried sample
CE162	Mineral Oil in Soil	Acetone:Hexane extract, Floriil clean up and GCFID	As submitted sample

DEVIATING SAMPLE INFORMATION

Comments
Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

a	Sampling date not provided
b	Sampling time not provided (waters only)
c	Sample not received in appropriate containers
d	Storage Temperature
e	Headspace present in sample container
f	Sample exceeded sampling to receipt
g	Sample exceeded holding time(s)

Lab ref	Sample ID	Depth (m)	Deviating	Tests (Reason for deviation)
98691	WS101	0.15 - 0.4	N	
98692	WS102	0.15 - 0.5	N	
98693	WS102	0.5 - 1.2	N	
98694	WS103	0.1 - 0.6	N	

REPORT INFORMATION

Report No.:26-03891, issue number 1

Key

U	ISO17025 Accredited Result
M	ISO17025 and MCERTS Accredited Result
N	Do not currently hold accreditation
^	MCERTS accreditation not applicable for sample matrix
*	ISO17025 accreditation not applicable for sample matrix
S	Subcontracted
I/S	Insufficient Sample
U/S	Unsuitable sample
N/T	Not tested
<	Means "less than"
>	Means "greater than"

LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

This report shall not be reproduced except in full, without prior written approval.

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

The results relate only to the sample received.

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Moisture Content Calculated on a Wet Weight basis (at 30°C)

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

Where sampling was undertaken by Chemtech Environmental Limited it is outside the UKAS accreditation scope.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

For soils and solids, all results are reported on a dry basis (30°C). Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones and 'inert' material, where applicable.

'Client Reference', 'Sample ID', 'Sample Location', 'Sample Type', 'Depth', 'Sample Date' and 'Sample Time' information is provided by the customer

Sample Retention and Disposal

All soil samples will be retained for a period of 4 weeks from the point of receipt

All water samples will be retained for a period of 2 weeks from the point of Reporting

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Unless specifically identified (noted as "(B)" in analyte name) all internal analysis performed at Durham site

Statement of Conformity

Statement of Conformity

Where Chemtech reports a statement of conformity to a specification, the decision rules applied are derived from the Ilac document ILAC G8:09/2019.

Acceptance limits (AL), applied are derived from the tolerance limits (TL) by you the client or applicable standard (e.g. 2003.33.EC Council Decision, BS3882, BS8601)

Agreed and reported Decision Rule:

"PASS" if the result < TL, and the bias / precision values for the process meet the targets defined within the methodology and/or applied accreditation.

Reported Decisions:

Result < TL for determinands: PASS

Result > TL for determinands: FAIL

Definitions Used:

Acceptance limit (AL) Specified upper or lower bounds of permissible measured quantity values.

Tolerance limit (TL) Specified upper or lower bound of permissible values of a property.

Accreditation of WAC/BS3882/BS8601

Accreditation in Soil to MCERTS is only applicable for specific matrix types identified as soil (Sand/Loam/Clay) during the sample assessment

If the sample is classified as not soil, no accreditation is conveyed

Human Health Assessment Summary - Soils Test Data									
					Stratum:				
					Location:	WS101	WS102	WS102	WS103
					Depth:	0.15 - 0.4	0.15 - 0.5	0.5 - 1.2	0.1 - 0.6
					Date:				
Contaminant	GAC (mg/kg)	No. Samples	Min. Value	Max. Value	No. Samples ≥GAC				
Moisture Content	-	4	2.10	9.80	-	5	4	10	2
Soil Organic Matter	-	4	0.90	9.86	-	1	3.0	9.9	3.7
pH	-	4	7.40	9.40	-	9	8.5	7.4	9.4
Water Soluble Sulphate (2:1 Leachate Equivalent) (mg/l)	Note mg/l	4	31.00	1890.00	-	31	42.1	1890.0	137.0
Arsenic	640	4	< LOD	16.40	0	< 2.3	3.1	16.4	2.9
Cadmium	190	4	< LOD	<LOD	0	< 1.1	< 1.1	< 1.1	< 1.1
Chromium (III)	8600	4	2.71	32.80	0	3	8.3	16.2	32.8
Hexavalent Chromium (VI)	33	4	< LOD	<LOD	0	< 0.040	< 0.040	< 0.040	< 0.040
Copper	68000	4	2.40	35.10	0	2	8.3	23.9	35.1
Lead	2300	4	7.00	219.00	0	219	63.3	63.9	7.0
Mercury	58.0	4	< LOD	<LOD	0	< 0.6	< 0.6	< 0.6	< 0.6
Nickel	980	4	< LOD	24.60	0	< 1.6	4.8	21.8	24.6
Selenium	12000	4	< LOD	<LOD	0	< 3.0	< 3.0	< 3.0	< 3.0
Zinc	730000	4	17.70	81.00	0	18	81.0	56.3	43.5
Cyanide (free)	373	0	0.00	<LOD	0				
Phenol (total)	690	0	0.00	<LOD	0				
Naphthalene	460.0	4	< LOD	0.29	0	< 0.016	0.04	0.29	< 0.016
Acenaphthylene	97000	4	< LOD	<LOD	0	< 0.015	< 0.015	< 0.015	< 0.015
Acenaphthene	97000	4	< LOD	<LOD	0	< 0.013	< 0.013	< 0.013	< 0.013
Fluorene	68000	4	< LOD	0.02	0	< 0.013	< 0.013	0.02	< 0.013
Phenanthrene	22000	4	0.02	1.47	0	0.0160	0.11	1.47	0.06
Anthracene	540000	4	< LOD	0.12	0	< 0.017	0.03	0.12	0.02
Fluoranthene	23000	4	< LOD	0.28	0	< 0.017	0.14	0.28	0.04
Pyrene	54000	4	< LOD	0.19	0	< 0.016	0.13	0.19	0.10
Benzo(a)anthracene	170	4	< LOD	0.09	0	< 0.012	0.08	0.09	0.04
Chrysene	350	4	< LOD	0.10	0	< 0.028	0.06	0.10	0.06
Benzo(b)fluoranthene	44.0	4	< LOD	0.15	0	< 0.020	0.15	0.07	0.10
Benzo(k)fluoranthene	1200	4	< LOD	0.05	0	< 0.025	0.05	< 0.025	< 0.025
Benzo(a)pyrene	2.2	4	< LOD	0.11	0	< 0.019	0.11	0.05	0.08
Indeno(1,2,3-cd)pyrene	510	4	< LOD	0.15	0	< 0.019	0.15	0.04	0.08
Dibenz(a,h)anthracene	3.60	4	< LOD	0.04	0	< 0.017	0.04	< 0.017	0.04
Benzo(ghi)perylene	4000	4	0.03	0.17	0	0.0330	0.17	0.04	0.12
Asbestos Detected (Detected or Not-Detected)	Y	3	0.00	0.00	0	Not-Detected	Not-Detected		Not-Detected
Asbestos Quantification (% w/w)	0.001	0	0.00	<LOD	0				
Petroleum Hydrocarbons Aliphatic >EC5-EC6	5900	3	< LOD	<LOD	0	< 0.10	< 0.10		< 0.10
Petroleum Hydrocarbons Aliphatic >EC6-EC8	17000	3	< LOD	<LOD	0	< 0.10	< 0.10		< 0.10
Petroleum Hydrocarbons Aliphatic >EC8-EC10	4800	3	< LOD	<LOD	0	< 0.10	< 0.10		< 0.10
Petroleum Hydrocarbons Aliphatic >EC10-EC12	23000	3	1.90	2.70	0	2	2.3		2.7
Petroleum Hydrocarbons Aliphatic >EC12-EC16	82000	3	1.60	2.70	0	2	2.3		2.7
Petroleum Hydrocarbons Aliphatic >EC16-EC35	1700000	3	29.60	206.80	0	30	47.8		206.8
Petroleum Hydrocarbons Aliphatic >EC35-EC40	1700000	3	17.50	193.00	0	25	17.5		193.0
Petroleum Hydrocarbons Aromatic >EC5-EC7	46000	3	< LOD	<LOD	0	< 0.010	< 0.010		< 0.010
Petroleum Hydrocarbons Aromatic >EC7-EC8	110000	3	< LOD	<LOD	0	< 0.010	< 0.010		< 0.010
Petroleum Hydrocarbons Aromatic >EC8-EC10	8100	3	< LOD	<LOD	0	< 0.010	< 0.010		< 0.010
Petroleum Hydrocarbons Aromatic >EC10-EC12	28000	3	5.10	8.60	0	5	7.2		8.6
Petroleum Hydrocarbons Aromatic >EC12-EC16	37000	3	14.40	23.00	0	14	19.2		23.0
Petroleum Hydrocarbons Aromatic >EC16-EC21	28000	3	10.30	19.40	0	10	14.7		19.4
Petroleum Hydrocarbons Aromatic >EC21-EC35	28000	3	119.00	718.00	0	119	313.0		718.0
Petroleum Hydrocarbons Aromatic >EC35-EC40	28200	3	47.20	636.00	0	47	171.0		636.0
Benzene	47.00	3	< LOD	<LOD	0	< 0.001	< 0.001		< 0.001
Toluene	110000	3	< LOD	<LOD	0	< 0.001	< 0.001		< 0.001
Ethyl benzene	13000	3	< LOD	<LOD	0	< 0.001	< 0.001		< 0.001
o-Xylene	150000	3	< LOD	<LOD	0	< 0.002	< 0.002		< 0.002
m- & p-Xylene	28000	3	< LOD	<LOD	0	< 0.002	< 0.002		< 0.002
MTBE	13000	3	< LOD	<LOD	0	< 0.002	< 0.002		< 0.002
Chloroethene (Vinyl Chloride)	0.07700	0	0.00	<LOD	0				
1,2-Dichloroethane (1,2-DCA)	0.970	0	0.00	<LOD	0				
1,1,1-Trichloroethane	1300.0	0	0.00	<LOD	0				
1,1,2,2-Tetrachloroethane	550.0	0	0.00	<LOD	0				
1,1,1,2-Tetrachloroethane	1.9	0	0.00	<LOD	0				
Tetrachloroethene (PCE)	42.00	0	0.00	<LOD	0				
Tetrachloromethane (carbon tetrachloride)	6.300	0	0.00	<LOD	0				
Trichloroethene (TCE)	2.600	0	0.00	<LOD	0				
Trichloromethane (chloroform)	170.00	0	0.00	<LOD	0				
Chlorobenzene	130.00	0	0.00	<LOD	0				
1, 2 Dichlorobenzene	4800	0	0.00	<LOD	0				
1, 3 Dichlorobenzene	73.00	0	0.00	<LOD	0				
1, 4 Dichlorobenzene	10000	0	0.00	<LOD	0				
1, 2, 3 Trichlorobenzene	250.00	0	0.00	<LOD	0				
1, 2, 4 Trichlorobenzene	530.00	0	0.00	<LOD	0				
1, 3, 5 Trichlorobenzene	55.00	0	0.00	<LOD	0				
1, 2, 3, 4 Tetrachlorobenzene	3080	0	0.00	<LOD	0				
1, 2, 3, 5 Tetrachlorobenzene	120.00	0	0.00	<LOD	0				
1, 2, 4, 5 Tetrachlorobenzene	72.00	0	0.00	<LOD	0				
Pentachlorobenzene	770.0	0	0.00	<LOD	0				
Hexachlorobenzene	120.0	0	0.00	<LOD	0				
Hexachlorobutadiene	66.00	0	0.00	<LOD	0				
ADD CoC	0.0	0	0.00	<LOD	0				
ADD CoC	0.0	0	0.00	<LOD	0				
Mean Average SOM	**4.4**								
Mean Average pH	**8.6**								

Assessment Scenario Selected: **Commercial 2.5% SOM**
Job Number: **C6579**
Client: **MODULEK**
Site: **Wrexham FC Training Ground**
Stratum: **Made Ground**

Values in RED are > the relevant screening levels and further assessment is required. Exceedance of the screening levels alone may not mean a risk is posed.

APPENDIX E

Monitoring Results

Ground Gas Monitoring Results

BROWNFIELD SOLUTIONS LTD

CLIENT:	Date	Operator	Analsyer	Weather Observations			Temp (°C)	Pressure Trend	Min Barometric Pressure (mb)	Notes
MODULEK	02/04/2026	JL	GFM436	Sunny	Light breeze	Cool	10	Steady	1013	
JOB NO.	30/04/2026	SJ	GFM436	Sunny	Light breeze	Warm	15	Falling	1013	
C6579	08/05/2026	SJ	GFM436	Overcast	Light breeze	Cool	11	Rising	1006	
SITE:	13/05/2026	JL	GFM436	Light rain	Windy	Cool	9	Falling	991	
WREXHAM FC TRAINING GROUND										

Notes: mb = milibars; CH_4 = methane; LEL = lower explosive limit = 5%v/v; CO_2 = carbon dioxide; O_2 = oxygen; CO=carbon monoxide; H_2S = hydrogen sulphide; TVOC= Total volatile organic compounds; PPM = parts per million. Where the flow is less than the limit of detection of the instrument, the detection limit is reported (Highlighted in green). Gas Screening Values (GSVs) are rounded to 3 decimal places. Calibration Records for analysers used availble on request.

Date	Time	Location	Response zone (m)		Pressures (mb)			Gas flows (l/hr)		CH_4 (%v/v)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)		Other Gases (PPM)			Depth to Water (m)	Well Base (m)	Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes
					Atmospheric Pressure	Relative Well Pressure		Initial	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	CO	H_2S	TVOC (PID)					
					Summary Statistcs																				
				Max. values:	1014	0.1	0.1	0.1	0.1	0.1	2.0	2.0	8.7	8.7	21.0	18.9	0.1	0.1	0.0	0.0	5.0	0.000	0.009	Highlight Box - Methane >1.0% v/v
				Min. values:	991	0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	1.3	1.3	0.1	0.1	0.0	0.0	4.3	0.000	0.000	Highlight Box - Carbon Dioxide >5.0% v/v
			Top	Bottom	Worst-case (note - not worst credible) GSVs based on maximum recorded steady flow and maximum individual peak concentrations:																	0.000	0.009	Highlight Box - Water above Response Zone
Visit 1	PM	Ambient								0.1		2.0		0.1		20.6									
02/04/26		WS101	1.00	5.00	1014	0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	19.7	19.7	0.1	0.1		NGW	4.7	0.000	0.000	
02/04/26		WS102	1.00	5.00	1013	0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	20.0	20.0	0.1	0.1		NGW	4.54	0.000	0.000	
02/04/26		WS103	1.00	5.00	1014	0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	19.9	20.0	0.1	0.1		4.78	4.85	0.000	0.000	
	PM	Ambient								0.1		2.0		0.1		20.7									
Visit 2	AM	Ambient								0.1				0.1		20.1		0.1	0.1						
30/04/2026	09:30:00	WS101	1.00	5.00	1014	0.1	0.1	0.1	0.1	0.1	2.0	2.0	8.7	8.7	1.9	1.9	0.1	0.1		NGW	4.75	0.000	0.009	
30/04/2026	09:41:00	WS102	1.00	5.00	1013	0.1	0.1	0.1	0.1	0.1	2.0	2.0	4.7	4.7	1.3	1.3	0.1	0.1		NGW	4.58	0.000	0.005	
30/04/2026	09:50:00	WS103	1.00	5.00	1013	0.1	0.1	0.1	0.1	0.1	2.0	2.0	4.6	4.6	7.4	7.4	0.1	0.1		NGW	4.95	0.000	0.005	
	AM	Ambient								0.1		2.0		0.1		20.3		0.1	0.1						
Visit 3	AM	Ambient								0.1		2.0		0.1		20.3									
08/05/2026		WS101	1.00	5.00	1006	0.1	0.1	0.1	0.1	0.1	2.0	2.0	4.6	4.5	10.3	10.3	0.1	0.1		NGW	4.75	0.000	0.005	
08/05/2026		WS102	1.00	5.00	1006	0.1	0.1	0.1	0.1	0.1	2.0	2.0	0.3	0.1	18.8	18.9	0.1	0.1		NGW	4.28	0.000	0.000	
08/05/2026		WS103	1.00	5.00	1006	0.1	0.1	0.1	0.1	0.1	2.0	2.0	4.8	4.8	3.0	3.0	0.1	0.1		NGW	4.98	0.000	0.005	
	AM	Ambient								0.1		2.0		0.1		20.2									
Visit 4	AM	Ambient								0.1		2.0		0.1		21.0									
13/05/2026		WS101	1.00	5.00	991	0.1	0.1	0.1	0.1	0.1	2.0	2.0	4.2	1.4	19.5	16.3	0.1	0.1		NGW	4.71	0.000	0.004	
13/05/2026		WS102	1.00	5.00	991	0.1	0.1	0.1	0.1	0.1	2.0	2.0	3.1	0.1	17.7	17.7	0.1	0.1		NGW	4.55	0.000	0.003	
13/05/2026		WS103	1.00	5.00	991	0.1	0.1	0.1	0.1	0.1	2.0	2.0	4.7	4.7	5.2	2.4	0.1	0.1		NGW	4.90	0.000	0.005	
	AM	Ambient								0.1		2.0		0.1		20.9		0.1	0.1						

APPENDIX F

Waste Assessment Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

I6TR2-KJ349-PG5PR

Report is invalid if pages are removed.

Job name

Wrexham FC Training Ground

Description/Comments

-

Project

C6579

Site

Wrexham FC Training Ground

Classified by

Name:
Tom Lipscomb
Date:
29 Apr 2026 12:58 GMT
Telephone:
01606 334844

Company:
Brownfield Solutions Limited
5 Alfred Court
Saxon Business Park
Bromsgrove
B60 4AD

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	05 Feb 2026

Next 3 year Refresher due by Feb 2029

Purpose of classification

2 - Material Characterisation

Address of the waste

Chester Road, Gresford, Wrexham **Post Code** LL12 8PW

SIC for the process giving rise to the waste

41100 Development of building projects

Description of industry/producer giving rise to the waste

Development of sports pavillion on potential previous landfill

Description of the specific process, sub-process and/or activity that created the waste

Waste created during excavation of soils for development

Description of the waste

Made ground comprising predomindantly of sand and gravel.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS101	0.15 - 0.4	Non Hazardous		3
2	WS102	0.15 - 0.5	Non Hazardous		5
3	WS102[2]	0.5 - 1.2	Non Hazardous		7
4	WS103	0.1 - 0.6	Hazardous	HP 7, HP 11	9

Related documents

#	Name	Description
1	Example worst case waste stream template: 17 05 04 or 17 05 03 *	waste stream template used to create this Job

Report

Created by: Tom Lipscomb

Created date: 29 Apr 2026 12:58 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	12
Appendix B: Rationale for selection of metal species	13
Appendix C: Version	13

Classification of sample: WS101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS101
Sample Depth:
0.15 - 0.4 m
Moisture content:
5%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	asbestos fibres detected (Yes/No)			ACM_FIBRES		No					
2	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				<2.3 mg/kg	1.895	<4.357 mg/kg	<0.000436 %		<**LOD**
3	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		<1.1 mg/kg	1.855	<2.04 mg/kg	<0.000204 %		<**LOD**
4	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		2.71 mg/kg	1.462	3.961 mg/kg	0.000396 %		
5	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.04 mg/kg	2.27	<0.0908 mg/kg	<0.00000908 %		<**LOD**
6	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		2.4 mg/kg	3.929	9.43 mg/kg	0.000943 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	219 mg/kg	1.56	341.6 mg/kg	0.0219 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.6 mg/kg	1.353	<0.812 mg/kg	<0.0000812 %		<**LOD**
9	nickel { nickel dibromate }	028-053-00-5	238-596-1	14550-87-9		<1.6 mg/kg	5.358	<8.573 mg/kg	<0.000857 %		<**LOD**
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<3 mg/kg	2.554	<7.662 mg/kg	<0.000766 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		17.7 mg/kg	2.774	49.102 mg/kg	0.00491 %		
12	TPH (C6 to C40) petroleum group			TPH		253.7 mg/kg		253.7 mg/kg	0.0254 %		
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		pH		PH		9.2	pH		9.2	pH	9.2 pH		
17		naphthalene				<0.016	mg/kg		<0.016	mg/kg	<0.0000016 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<**LOD**
			205-917-1	208-96-8									
19		acenaphthene				<0.013	mg/kg		<0.013	mg/kg	<0.0000013 %		<**LOD**
			201-469-6	83-32-9									
20		fluorene				<0.013	mg/kg		<0.013	mg/kg	<0.0000013 %		<**LOD**
			201-695-5	86-73-7									
21		phenanthrene				0.016	mg/kg		0.016	mg/kg	0.0000016 %		
			201-581-5	85-01-8									
22		anthracene				<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<**LOD**
			204-371-1	120-12-7									
23		fluoranthene				<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<**LOD**
			205-912-4	206-44-0									
24		pyrene				<0.016	mg/kg		<0.016	mg/kg	<0.0000016 %		<**LOD**
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.012	mg/kg		<0.012	mg/kg	<0.0000012 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.028	mg/kg		<0.028	mg/kg	<0.0000028 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.025	mg/kg		<0.025	mg/kg	<0.0000025 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.019	mg/kg		<0.019	mg/kg	<0.0000019 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.019	mg/kg		<0.019	mg/kg	<0.0000019 %		<**LOD**
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				0.033	mg/kg		0.033	mg/kg	0.0000033 %		
			205-883-8	191-24-2									
										Total:	0.0535 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and [redacted]C;"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 5000 mg/kg (0.5%) because: TPH concentration too low to be flamable

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0254%)

Classification of sample: WS102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS102
Sample Depth:
0.15 - 0.5 m
Moisture content:
3.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 3.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	asbestos fibres detected (Yes/No)			ACM_FIBRES		No					
2	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				3.1 mg/kg	1.895	5.873 mg/kg	0.000587 %		
3	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		<1.1 mg/kg	1.855	<2.04 mg/kg	<0.000204 %		<LOD
4	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8.27 mg/kg	1.462	12.087 mg/kg	0.00121 %		
5	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.04 mg/kg	2.27	<0.0908 mg/kg	<0.00000908 %		<LOD
6	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		8.3 mg/kg	3.929	32.611 mg/kg	0.00326 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	63.3 mg/kg	1.56	98.736 mg/kg	0.00633 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.6 mg/kg	1.353	<0.812 mg/kg	<0.0000812 %		<LOD
9	nickel { nickel dibromate }	028-053-00-5	238-596-1	14550-87-9		4.8 mg/kg	5.358	25.72 mg/kg	0.00257 %		
10	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<3 mg/kg	2.554	<7.662 mg/kg	<0.000766 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		81 mg/kg	2.774	224.706 mg/kg	0.0225 %		
12	TPH (C6 to C40) petroleum group			TPH		595 mg/kg		595 mg/kg	0.0595 %		
13	benzene	601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
14	toluene	601-021-00-3	203-625-9	108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
15	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		pH		PH		8.5	pH		8.5	pH	8.5 pH		
17		naphthalene				0.039	mg/kg		0.039	mg/kg	0.0000039 %		
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<**LOD**
			205-917-1	208-96-8									
19		acenaphthene				<0.013	mg/kg		<0.013	mg/kg	<0.0000013 %		<**LOD**
			201-469-6	83-32-9									
20		fluorene				<0.013	mg/kg		<0.013	mg/kg	<0.0000013 %		<**LOD**
			201-695-5	86-73-7									
21		phenanthrene				0.106	mg/kg		0.106	mg/kg	0.0000106 %		
			201-581-5	85-01-8									
22		anthracene				0.033	mg/kg		0.033	mg/kg	0.0000033 %		
			204-371-1	120-12-7									
23		fluoranthene				0.136	mg/kg		0.136	mg/kg	0.0000136 %		
			205-912-4	206-44-0									
24		pyrene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			204-927-3	129-00-0									
25		benzo[a]anthracene				0.077	mg/kg		0.077	mg/kg	0.0000077 %		
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				0.056	mg/kg		0.056	mg/kg	0.0000056 %		
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				0.048	mg/kg		0.048	mg/kg	0.0000048 %		
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				0.113	mg/kg		0.113	mg/kg	0.0000113 %		
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				0.145	mg/kg		0.145	mg/kg	0.0000145 %		
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				0.042	mg/kg		0.042	mg/kg	0.0000042 %		
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				0.171	mg/kg		0.171	mg/kg	0.0000171 %		
			205-883-8	191-24-2									
										Total:	0.0961 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and [redacted] °C;"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 5000 mg/kg (0.5%) because: TPH concentration too low to be flamable

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0595%)

Classification of sample: WS102[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS102[2]
Sample Depth:
0.5 - 1.2 m
Moisture content:
9.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				16.4 mg/kg	1.895	31.07 mg/kg	0.00311 %		
2	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		<1.1 mg/kg	1.855	<2.04 mg/kg	<0.000204 %		<**LOD**
3	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16.2 mg/kg	1.462	23.677 mg/kg	0.00237 %		
4	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.04 mg/kg	2.27	<0.0908 mg/kg	<0.00000908 %		<**LOD**
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		23.9 mg/kg	3.929	93.904 mg/kg	0.00939 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	63.9 mg/kg	1.56	99.672 mg/kg	0.00639 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.6 mg/kg	1.353	<0.812 mg/kg	<0.0000812 %		<**LOD**
8	nickel { nickel dibromate }	028-053-00-5	238-596-1	14550-87-9		21.8 mg/kg	5.358	116.811 mg/kg	0.0117 %		
9	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<3 mg/kg	2.554	<7.662 mg/kg	<0.000766 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		56.3 mg/kg	2.774	156.184 mg/kg	0.0156 %		
11	pH			PH		7.4 pH		7.4 pH	7.4 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.285 mg/kg		0.285 mg/kg	0.0000285 %		
13	acenaphthylene		205-917-1	208-96-8		<0.015 mg/kg		<0.015 mg/kg	<0.0000015 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.013 mg/kg		<0.013 mg/kg	<0.0000013 %		<**LOD**
15	fluorene		201-695-5	86-73-7		0.015 mg/kg		0.015 mg/kg	0.0000015 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		phenanthrene				1.47	mg/kg		1.47	mg/kg	0.000147 %		
			201-581-5	85-01-8									
17		anthracene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			204-371-1	120-12-7									
18		fluoranthene				0.281	mg/kg		0.281	mg/kg	0.0000281 %		
			205-912-4	206-44-0									
19		pyrene				0.187	mg/kg		0.187	mg/kg	0.0000187 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.087	mg/kg		0.087	mg/kg	0.0000087 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.095	mg/kg		0.095	mg/kg	0.0000095 %		
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.071	mg/kg		0.071	mg/kg	0.0000071 %		
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.025	mg/kg		<0.025	mg/kg	<0.0000025 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.051	mg/kg		0.051	mg/kg	0.0000051 %		
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.039	mg/kg		0.039	mg/kg	0.0000039 %		
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.017	mg/kg		<0.017	mg/kg	<0.0000017 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.041	mg/kg		0.041	mg/kg	0.0000041 %		
			205-883-8	191-24-2									
										Total:	0.0488 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS103

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS103
Sample Depth:
0.1 - 0.6 m
Moisture content:
2.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which may induce cancer or increase its incidence."

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.181%)

HP 11: Mutagenic "waste which may produce heritable increases in frequency of mutations in somatic and/or germ cells of humans and/or other organisms."

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.181%)

Determinands

Moisture content: 2.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	asbestos fibres detected (Yes/No)			ACM_FIBRES		No					
2	arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }	033-005-00-1				2.9 mg/kg	1.895	5.494 mg/kg	0.000549 %		
3	cadmium { cadmium sulfate }	048-009-00-9	233-331-6	10124-36-4		<1.1 mg/kg	1.855	<2.04 mg/kg	<0.000204 %		<**LOD**
4	chromium in Cr(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		32.8 mg/kg	1.462	47.939 mg/kg	0.00479 %		
5	chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<0.04 mg/kg	2.27	<0.0908 mg/kg	<0.00000908 %		<**LOD**
6	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		35.1 mg/kg	3.929	137.91 mg/kg	0.0138 %		
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	7 mg/kg	1.56	10.919 mg/kg	0.0007 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.6	mg/kg	1.353	<0.812	mg/kg	<0.0000812 %		<LOD
9		nickel { nickel dibromate }	028-053-00-5	238-596-1	14550-87-9		24.6	mg/kg	5.358	131.815	mg/kg	0.0132 %		
10		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<3	mg/kg	2.554	<7.662	mg/kg	<0.000766 %		<LOD
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		43.5	mg/kg	2.774	120.675	mg/kg	0.0121 %		
12		TPH (C6 to C40) petroleum group			TPH		1810.2	mg/kg		1810.2	mg/kg	0.181 %		
13		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<LOD
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<LOD
18		pH			PH		9.4	pH		9.4	pH	9.4 pH		
19		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.016	mg/kg		<0.016	mg/kg	<0.0000016 %		<LOD
20		acenaphthylene		205-917-1	208-96-8		<0.015	mg/kg		<0.015	mg/kg	<0.0000015 %		<LOD
21		acenaphthene		201-469-6	83-32-9		<0.013	mg/kg		<0.013	mg/kg	<0.0000013 %		<LOD
22		fluorene		201-695-5	86-73-7		<0.013	mg/kg		<0.013	mg/kg	<0.0000013 %		<LOD
23		phenanthrene		201-581-5	85-01-8		0.056	mg/kg		0.056	mg/kg	0.0000056 %		
24		anthracene		204-371-1	120-12-7		0.018	mg/kg		0.018	mg/kg	0.0000018 %		
25		fluoranthene		205-912-4	206-44-0		0.041	mg/kg		0.041	mg/kg	0.0000041 %		
26		pyrene		204-927-3	129-00-0		0.098	mg/kg		0.098	mg/kg	0.0000098 %		
27		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.036	mg/kg		0.036	mg/kg	0.0000036 %		
28		chrysene	601-048-00-0	205-923-4	218-01-9		0.064	mg/kg		0.064	mg/kg	0.0000064 %		
29		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.103	mg/kg		0.103	mg/kg	0.0000103 %		
30		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.025	mg/kg		<0.025	mg/kg	<0.0000025 %		<LOD
31		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.075	mg/kg		0.075	mg/kg	0.0000075 %		
32		indeno[123-cd]pyrene		205-893-2	193-39-5		0.079	mg/kg		0.079	mg/kg	0.0000079 %		
33		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.044	mg/kg		0.044	mg/kg	0.0000044 %		
34		benzo[ghi]perylene		205-883-8	191-24-2		0.123	mg/kg		0.123	mg/kg	0.0000123 %		
											Total:	0.226 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60 °C or waste gas oil, diesel and light heating oils having a flash point > 55 °C and [redacted] °C;"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 5000 mg/kg (0.5%) because: TPH concentration too low to be flamable

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.181%)

Appendix A: Classifier defined and non GB MCL determinands

asbestos fibres detected (Yes/No) (CAS Number: ACM_FIBRES)

Description/Comments: not classified, information only
Data source: N/A
Data source date: 15 Jan 2020
Hazard Statements: None.

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from:: IARC Group 2B (77) 2000

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic acid and its salts with the exception of those specified elsewhere in this Annex}

Worst case CLP species based on hazard statements/molecular weight and conversion factor for arsenic acid H3AsO4. (edit as required)

cadmium {cadmium sulfate}

Worst case CLP species based on hazard statements/molecular weight. (edit as required)

chromium in Cr(III) compounds {chromium(III) oxide (worst case)}

There isn't enough Metal and Cr(VI) to make the Metal chromate

chromium in Cr(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {copper sulphate pentahydrate}

Worst case CLP species based on hazard statements/molecular weight. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Reasonable worst case CLP species based on hazard statements/molecular weight and assuming no evidence for the use of explosives. (edit as required)

nickel {nickel dibromate}

Worst case CLP species based on hazard statements/molecular weight. (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2026.83.7020.12656 (25 Mar 2026)
HazWasteOnline Database: 2026.83.7020.12656 (25 Mar 2026)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024
GB MCL List v6.0 - version 6.0 of 15th February 2025
GB MCL List v7.0 - version 7.0 of 23rd September 2025

APPENDIX G

CON29M Report

Groundsure
LOCATION INTELLIGENCE

CON29M
OFFICIAL COAL MINING SEARCH

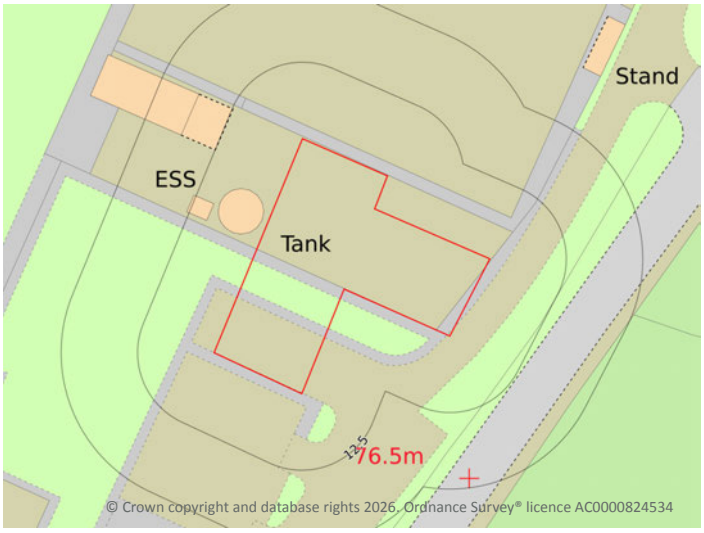
Wrexham FC Training Ground

Professional opinion

Including mine entry interpretive assessment where appropriate

PASS

Site plan



Search results

1. **Past underground coal mining**
Identified page 4 >

2. **Present underground coal mining**
Not identified

3. **Future underground coal mining**
Not identified

4. **Mine entries**
Not identified

5. **Coal mining geology**
Not identified

6. **Past opencast coal mining**
Not identified

7. **Present opencast coal mining**
Not identified

8. **Future opencast coal mining**
Not identified

9. **Coal mining subsidence claims**
Not identified

10. **Mine gas emissions**
Not identified

11. **Emergency Call Out incidents**
Not identified

12. **Withdrawal of support**
Identified page 7 >

13. **Working facilities orders**
Not identified

14. **Payments to copyhold owners**
Not identified

Cheshire Brine
Not identified

Contact us with any questions at:
info@groundsure.com
01273 257 755

Ref: BRO-YZJ-TFG-6HC-SF9
Your ref: C6579 JM
Grid ref: 334402 354196
Date: 18 May 2026

Certified B Corporation

Coal mining (CON29M) assessment

We consider the property to be acceptably free from coal mining related risk. No further action is required with regards to past coal mining.

Coal mining

Coal Mining Subsidence Act 1991

If any coal mining subsidence damage has occurred, as determined by the appropriate persons/bodies, the property will benefit from the protection of the Coal Mining Subsidence Acts of 1991 and as amended 1994.

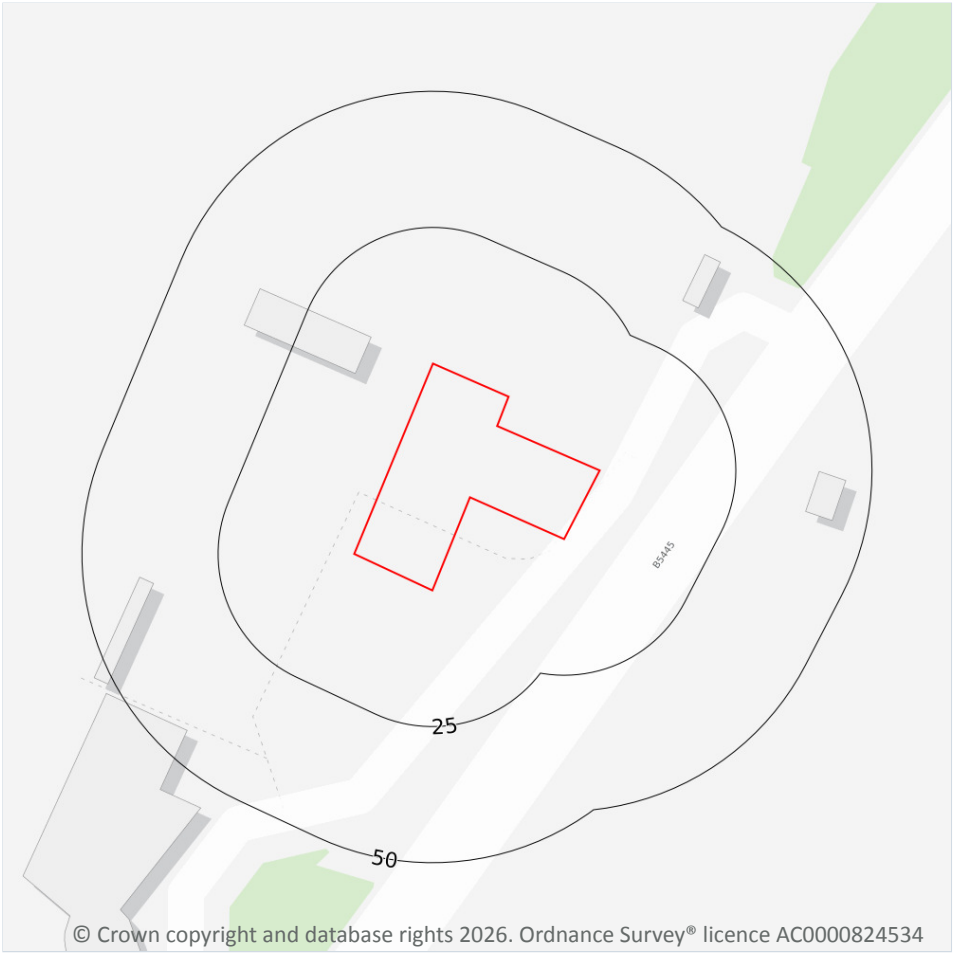
This Act, however, does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester. In this instance it would be prudent to have the property visually inspected for signs of mining related settlement or subsidence by a suitably qualified and experienced person, who could be sought through www.ricsfirms.com ↗.

The Coal Authority provide a call out service on 01623 646 333 to take remedial action concerning the movement or collapse of any coal entries or coal mining surface hazards. Further details can be found on www.groundstability.com ↗.

CON29M reports are a requirement for conveyancing and are recommended throughout the official Coal Mining Reporting Area. This is the area within which it is deemed prudent to clarify the risk presented by coal mining, using the questions laid out in the Law Society's CON29M form. The need for a CON29M does not always translate to an identification of risk, and reports will often be assessed as free from risk or 'Passed' even though they are within the official Coal Mining Reporting Area.

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Coal mining (CON29M)



Site Outline

Search buffers in metres (m)

Mine entries

Adits

Shafts

Calculated 'zone of influence'

Subsidence claims

Awaiting decision

Rejected

Admitted

Deferred

Settled

Withdrawn

Probable shallow coal mine workings

Coal outcrops

Past shallow coal mine workings

Coal mining (CON29M)

The map above shows relevant, mappable hazards identified that could constitute a risk to the property. It does not necessarily show all features or potential issues identified in this report. Further details of any features shown indicating the location of Mine Entries or Subsidence Claims can be found in the relevant sections of this report (4 and 9 respectively).

Responses to the Law Society CON29M Coal Mining search enquiries are produced using official Coal Authority data and the expert interpretation of Groundsure. This report is prepared in accordance with The Law Society CON29M (2018) Guidance Notes. Additional interpretation and calculation of mine entry zones of influence has also been carried out by Groundsure using Coal Authority and British Geological Survey data.

Please read this report carefully, and in particular any sections flagged with an amber 'i'.

Contact us with any questions at:
info@groundsure.com
01273 257 755

A Law Society Licensed Provider
The Law Society

These enquiries are The Law Society CON29M (2018) Coal Mining search enquiries and are used with permission of The Law Society. The Law Society CON29M Coal Mining search enquiries are protected by copyright owned by The Law Society of 113 Chancery Lane, London WC2A 1PL. The Law Society has no responsibility for information provided in response to CON29M (2018) Coal Mining search enquiries within this report or otherwise.

1. Past underground coal mining

Is the property within the zone of likely physical influence on the surface of past underground coal workings?

- **The property lies within the potential zone of influence of recorded workings in 3 seam(s) of coal. The most recent underground working in the area was in 1960. These workings lie between 570 metres and 665 metres. Any ground movement due to this coal mining activity should have stopped.**

2. Present underground coal mining

Is the property within the zone of likely physical influence on the surface of present underground coal workings?

- **The property does not lie within the boundary of an underground site from which coal is being removed by underground methods.**

3. Future underground coal mining

(a) Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods?

- **The property does not lie within the boundary of an underground site for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods.**

(b) Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?

- **The property does not lie within the boundary of an underground site for which a licence to remove coal by underground methods has been granted.**

(c) Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?

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- **The property does not lie within the zone of likely physical influence on the surface of planned future underground workings.**

(d) Has any notice of proposals relating to underground coal mining operations been given under section 46 of the Coal Mining Subsidence Act 1991?

- **No notices have been given under Section 46 of the Coal Mining Subsidence Act 1991 stating that the land is at risk of subsidence.**

4. Mine entries

Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?

- **No coal mine entries are recorded to lie within 20 metres of the property.**

5. Coal mining geology

Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?

- **No damage arising from geological faults or other lines of weakness activated by coal mining are recorded within the property.**

6. Past opencast coal mining

Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?

- **The property does not lie within the boundary of an opencast site from which coal was removed by opencast methods.**

7. Present opencast coal mining

Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?

- **The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.**

8. Future opencast coal mining

(a) Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?

- **The property does not lie within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods.**

(b) Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?

- **The property does not lie within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.**

9. Coal mining subsidence claims

(a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 31st October 1994?

- **We have no evidence of a damage notice or subsidence claim for the property or within 50m of the property since 31st October 1994.**

(b) In respect of any such notice or claim has the responsible person given notice agreeing that there is a remedial obligation or otherwise accepted that a claim would lie against them?

- **Not applicable.**

(c) In respect of any such notice or acceptance has the remedial obligation or claim been discharged?

- **Not applicable.**

(d) Does any current "Stop Notice" delaying the start of remedial works or repairs affect the property?

- **There are no current Stop Notices delaying the start of remedial works or repairs to the property.**

(e) Has any request been made under Section 33 of the 1991 Act to execute preventive works before coal is worked, which would prevent the occurrence or reduce the extent of subsidence damage to any buildings, structures or works and, if yes, has any person withheld consent or failed to comply with any such request to execute preventive works?

- **There is no record of a request that has been made to carry out preventive works before coal is worked under Section 33 of the Coal Mining Subsidence Act 1991.**

NB. Records of damage notices or subsidence claims before 31st October 1994 are excluded from The Coal Authority data from which this search is compiled.

10. Mine gas emissions

Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?

- **No mine gas emissions are recorded within the boundary of the property.**

11. Emergency Surface Hazard Call Out incidents

Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

- **No Emergency Surface Hazard Call Out procedures are recorded against the property.**

12. Withdrawal of support

(a) Does the land lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published?

- **The property lies within an area where a notice of entitlement to withdraw support has been published. This notice was issued in 1945.**

(b) Does the land lie within a geographical area in respect of which a revocation notice has been given under section 41 of the Coal Industry Act 1994?

- **The property does not lie within a geographical area in which a revocation notice has been given under section 41 of the Coal Industry Act 1994.**

13. Working facilities orders

Is the property within a geographical area subject to an order in respect of the working of coal under the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof?

- **The property is not in an area where a court order has been issued.**

14. Payments to owners of former copyhold land

(a) Has any relevant notice, which may affect the property, been given?

- **The property does not lie within former copyholder land.**

(b) If yes, has any notice of retained interests in coal and coal mines been given?

- **No notices of retained interests in coal and coal mines been given.**

(c) If yes, has any acceptance notice or rejection notice been served?

- **No acceptance or rejection notices have been served.**

(d) If any such acceptance notice has been served, has any compensation been paid to a claimant?

- **No compensation has been paid to a claimant.**

Methodologies and limitations

Groundsure's methodologies and limitations are available here: knowledge.groundsure.com/methodologies-and-limitations ↗.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information in your report. To find out who they are and their areas of expertise see www.groundsure.com/sources-reference ↗.

Conveyancing Information Executive and our terms & conditions

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Groundsure Ltd. Groundsure adheres to the Conveyancing Information Executive Standards.

In addition to The Property Ombudsman (TPO) redress scheme covering consumers, TPO will also provide redress to small businesses (including Charities and Trusts) and where the customer meets the following criteria:

- a small business (or group of companies) with an annual turnover of less than [redacted];
- a charity with an annual income of less than [redacted];
- a Trust with a net asset value of less than [redacted]

Complaints Advice

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure.

If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to [redacted] to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Standards.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs.

COMPLAINTS PROCEDURE: If you want to make a complaint, we will:

- acknowledge it within 5 working days of receipt
- normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:
Operations Director, Groundsure Ltd, Nile House, Nile Street, Brighton, BN1 1HW. Tel: 01273 257 755. Email: info@groundsure.com ↗ If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk ↗ We will co-operate fully with the Ombudsman during an investigation and comply with their final decision.

Groundsure's Terms and Conditions can be viewed here: www.groundsure.com/terms-conditions-april-2026/ ↗

All of the advice and reports that Groundsure produces are covered by a comprehensive Remediation Contribution policy to ensure customers are protected, see www.groundsure.com/remediation ↗ for full details.

Coal Mining Report Insurance Policy

ZURICH

Coal Mining Report Insurance Policy

The Schedule

Policy Number: The Reference contained in the **Coal Mining Search Report**

Premium: [redacted] inclusive of Insurance Premium Tax at 12%

Property: The property which is the subject of the **Coal Mining Search Report**

Limit of Indemnity: [redacted] increasing by 10% compound per annum on each anniversary of and for the first 10 years following the **Commencement Date**

Commencement Date: The date of the **Coal Mining Search Report**

You/Your:
1. A purchaser of the **Property**
2. A lender providing a **Mortgage** in connection with a purchase of the **Property**
3. A lender providing a **Mortgage** by way of a re-mortgage of the **Property**

Definitions

Where a word is defined below or in the schedule it shall carry the same meaning wherever it appears in bold text in this policy

Insured Use: The continued use of the **Property** as a single house or flat or a single commercial premises

Market Value: The value as determined by a surveyor appointed by agreement between **You** and **Us** or (in default of agreement) the President for the time being of the Royal Institution of Chartered Surveyors

Mortgage: A mortgage or charge secured on the **Property** by an institutional mortgage lender

Coal Mining Search Report: The coal mining search report attached to this policy

Search: An official search comprising a search in form CON29M (2018) being mining searches relating to coal and brine in the area in which the **Property** is situated

We/Our/Us:
Zurich Insurance plc. A public limited company incorporated in Ireland. Registration No. 13460. Registered Office: Zurich House, Ballsbridge Park, Dublin 4, Ireland. UK Branch registered in England and Wales Registration No. BR7985. UK Branch Head Office: The Zurich Centre, 3000 Parkway, Whiteley, Fareham, Hampshire PO15 7JZ.

Zurich Insurance plc is authorised by the Central Bank of Ireland and authorised and subject to limited regulation by the Financial Conduct Authority. Details about the extent of our authorisation by the Financial Conduct Authority are available from us on request. Our FCA Firm Reference Number is 203093.

Communications may be monitored or recorded to improve our service and for security and regulatory purposes.

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Your Policy

This is a legal document and should be kept in a safe place.

This policy is an agreement between **You** and **Us** and cover is provided subject to the payment of the **Premium**.

You must read this policy and its conditions, exclusions, schedule and any endorsements as one contract. Please read all of them to make sure that they provide the cover **You** require. If they do not, please contact **Us** or **Your** insurance adviser who arranged the policy for **You**.

When **You** take out and make changes to the cover provided by this policy, **You** must take reasonable care to ensure that **You** accurately answer any questions which **We** ask of **You** and that any information **You** give **Us** is accurate. If **You** are taking out this policy for purposes which are mainly related to **Your** trade, business or profession, **You** must also let **Us** know about all facts which are material to **Our** decision to provide **You** with insurance. Failure to meet these obligations could result in this policy being invalidated, a claim not being paid, or an additional premium being charged.

Fair presentation of the risk

a) At inception of this policy and also whenever changes are made to it at **Your** request You must:

i) where **You** have taken out this policy for purposes which are wholly or mainly related to **Your** trade, business or profession, disclose to **Us** all material facts in a clear and accessible manner and not misrepresent any material facts, and
ii) where **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, take reasonable care not to misrepresent any material facts.

b) If **You** do not comply with clause a) of this condition **We** may:

i) avoid this policy which means that **We** will treat it as if it had never existed and refuse all claims where any non-disclosure or misrepresentation by **You** is proven by **Us** to be deliberate or reckless in which case **We** will not return the premium paid by **You**; and
ii) recover from **You** any amount **We** have already paid for any claims including costs or expenses **We** have incurred.

c) If You do not comply with clause a) of this condition and the non-disclosure or misrepresentation is not deliberate or reckless this policy may be affected in one or more of the following ways depending on what **We** would have done if **We** had known about the facts which **You** failed to disclose or misrepresented:

i) if **We** would not have provided **You** with any cover **We** will have the option to:
1. avoid the policy which means that **We** will treat it as if it had never existed and repay the premium paid; and
2. recover from **You** any amount **We** have already paid for any claims including costs or expenses **We** have incurred
ii) if **We** would have applied different terms to the cover **We** will have the option to treat this policy as if those different terms apply. **We** may recover any payments made by **Us** on claims which have already been paid to the extent that such claims would not have been payable had such additional terms been applied
iii) if **We** would have charged **You** a higher premium for providing the cover **We** will charge **You** the additional premium which **You** must pay in full.

d) If any insured person, other than **You**, is responsible for a misrepresentation or failure to make a fair presentation of the risk, **We** will invoke the remedies available to **Us** under this condition as against that particular person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

NB: For the purposes of the duty of disclosure stated in paragraphs a) i) and ii) above the content of the **Coal Mining Search Report** will be deemed to satisfy **Your** disclosure obligations.

Cover

1. **You** are in the process of purchasing the **Property** relying on the **Coal Mining Search Report** and/or
2. **You** (being a lender) have agreed to provide a **Mortgage** in connection with **Your** borrower's purchase or re-mortgage of the **Property** relying on the **Coal Mining Search Report**.

We will pay the following losses sustained by **You** arising out of the **Property** being affected by any matter which would have been revealed by a **Search** had one been carried out on the date of the **Coal Mining Search Report** but which was not revealed by the **Coal Mining Search Report**:

1. any reduction in **Market Value** of the **Property** calculated at the date **You** become aware of the matter(s) and/or loss in connection with a **Mortgage** as a result of such reduction.
2. all other costs and expenses including out of court settlement costs incurred by **Us** or by **You** with **Our** prior written agreement.

Waiver of Breach of Policy Condition

We will not exercise **Our** right to avoid **Our** liability to **You** in respect of loss where **You** have inadvertently breached any term or condition of the policy provided that such breach does not prejudice **Our** rights and remedies under the policy or otherwise directly or indirectly result in or increase the amount of any loss.

Protection for Mortgagees and Successors in Title

We will not avoid **Our** liability to make a payment to **You** solely because another person breaches the terms and conditions of this policy, provided such breach was not committed on **Your** behalf or with **Your** agreement, and **We** will invoke the remedies available to **Us** under the Policy as against that other person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

Joint Insured

Any party insured under this policy standing in the relation of parent company, subsidiary company, associated company, branch office or joint venture partner to each other will be deemed to be joint insured for the purposes of this policy and jointly liable and responsible for any breach of any terms and conditions of this policy. If there is any inconsistency between this clause and any other term of this policy, this clause shall prevail.

Exclusions

We will not pay for any:

1. amount in excess of the **Limit of Indemnity**.
2. loss which would be recoverable under a household buildings insurance policy.
3. loss arising from any matter that **You** were aware of at the **Commencement Date**.
4. loss if the **Property** is used for any purpose other than the **Insured Use**.

Claims Conditions and How to Claim

1. **You** must:

i) give **Us** written notice as soon as possible of any potential or actual claim or any circumstances likely to result in a claim. Please provide the policy number, **Your** name, the full address of the **Property** and a brief description of the incident that has occurred. Notifications should be sent to: Speciality Lines Claims Team, Zurich Insurance, 8th Floor, 70 Mark Lane, London, EC3R 7NQ. Email: claims@uk.zurich.com ↗, Enquiry line: telephone 0207 648 3523
ii) pass all court documents and/or other communications to **Us** as soon as possible after receipt
iii) not deal with, make any admission of liability or attempt to settle a claim without **Our** prior written agreement.
iv) agree to and carry out at **Our** expense all things necessary to minimise any loss.
v) provide all information and assistance that **We** may require to help defend and settle the claim.

2. **We** are entitled to:

i) decide how to settle or defend a claim and may carry out proceedings in the name of any person insured under this policy, including proceedings for recovering any claim.
ii) pay to **You** at any time, an amount equal to the **Limit of Indemnity** or any lower amount for which the claim can be settled, after deduction of any sum already paid. **We** may then give up control of and have no further liability in connection with the claim.

3. If **We** admit liability for a claim but there is a dispute as to the amount to be paid the dispute will be referred to an arbitrator. The arbitrator will be appointed jointly by **You** and **Us** in accordance with the law at the time. **You** may not take any legal action against **Us** over the dispute before the arbitrator has reached a decision.

4. If **You** or anyone acting on Your behalf:

a) makes a fraudulent or exaggerated claim under this policy; or
b) uses fraudulent means or devices including the submission of false or forged documents in support of a claim whether or not the claim is itself genuine; or
c) makes a false statement in support of a claim whether or not the claim is itself genuine; or
d) submits a claim under this policy for loss or damage which **You** or anyone acting on **Your** behalf or in connivance with **You** deliberately caused; or
e) realises after submitting what **You** reasonably believed was a genuine claim under this policy and then fails to tell **Us** that **You** have not suffered any loss or damage; or
f) suppresses information which **You** know would otherwise enable **Us** to refuse to pay a claim under this policy

We will be entitled to refuse to pay the whole of the claim and recover any sums that **We** have already paid in respect of the claim.

If any fraud is perpetrated by or on behalf of an insured person and not on behalf of **You** this condition should be read as if it applies only to that insured person's claim and references to this policy should be read as if they were references to the cover effected for that person alone and not to the policy as a whole.

5. If any claim is covered by any other insurance, **We** will not pay for more than **Our** share of that claim.

6. The most **We** will pay for any loss (or all losses in the aggregate), including costs and expenses agreed by **Us** is the **Limit of Indemnity**. Once **We** have paid a loss or losses equal to the amount of the **Limit of Indemnity, We** will have no further liability under this policy.

General Conditions

1. Neither **You** (nor anyone acting on **Your** behalf) must disclose the existence of this policy to any other party except **Your** legal and other professional advisers, prospective purchasers, lessees and tenants of the **Property**, their respective mortgagees, legal and other professional advisers.

2. In the UK the law allows both **You** and **Us** to choose the law applicable to the contract. This contract will be subject to the relevant law of England and Wales, Scotland, Northern Ireland, the Isle of Man or the Channel Islands depending upon the Property address stated in the Schedule. If there is any dispute as to which law applies it will be English law. The parties agree to submit to the exclusive jurisdiction of the English courts.

3. Notwithstanding any other terms of this policy **We** will be deemed not to provide cover nor will **We** make any payment or provide any service or benefit to **You** or any other party to the extent that such cover, payment, service, benefit and/or any business or activity of **Yours** would violate any applicable trade or economic sanctions law or regulation.

Cancellation Clause

If **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, **You** may cancel this policy within 14 days of receiving the policy by writing to **Us** and in such event **We** may, at **Our** discretion, charge **You** for the time that **You** have been on cover. Any refund will be made to the party who paid the premium. If **You** do cancel, **You** may be in breach of the terms of **Your** mortgage or the terms of the contract for the sale of **Your** property. If **You** are in doubt, **You** may wish to seek legal advice prior to cancellation.

Fair Processing and Complaints Procedure
Our Complaints Procedure

Our commitment to customer service

We are committed to providing a high level of customer service. If you feel we have not delivered this, we would welcome the opportunity to put things right for you.

Who to contact in the first instance

Many concerns can be resolved straight away. Therefore in the first instance, please get in touch with your usual contact at Zurich or your broker or insurance intermediary, as they will generally be able to provide you with a prompt response to your satisfaction.

Contact details will be provided on correspondence that we or our representatives have sent you.

Many complaints can be resolved within a few days of receipt

If we can resolve your complaint to your satisfaction within the first few days of receipt, we will do so. Otherwise, we will keep you

updated with progress and will provide you with our decision as quickly as possible.

Next steps if you are still unhappy

If you are not happy with the outcome of your complaint, you may be able to ask the Financial Ombudsman Service to review your case.

We will let you know if we believe the ombudsman service can consider your complaint when we provide you with our decision. The service they provide is free and impartial, but you would need to contact them within 6 months of the date of our decision.

More information about the ombudsman and the type of complaints they can review is available via their website www.financial-ombudsman.org.uk ↗.

You can also contact them as follows:

Post: Financial Ombudsman Service, Exchange Tower, London, E14 9SR
Telephone: 08000 234567 (free on mobile phones and landlines)
Email: complaint.info@financial-ombudsman.org.uk ↗

If the Financial Ombudsman Service is unable to consider your complaint, you may wish to obtain advice from the Citizens Advice Bureau or seek legal advice.

The Financial Services Compensation Scheme (FSCS)

We are covered by the Financial Services Compensation Scheme (FSCS) which means that you may be entitled to compensation if we are unable to meet our obligations to you. Further information is available on www.fscs.org.uk ↗ or by contacting the FSCS directly on 0800 678 1100.

How we use your information

Who controls your personal information

This notice tells you how Zurich Insurance plc ('Zurich'), as data controller, will deal with your personal information. Where Zurich introduces you to a company outside the group, that company will tell you how your personal information will be used.

You can ask for further information about our use of your personal information or complain about its use in the first instance, by contacting our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com ↗.

If you have any concerns regarding our processing of your personal information, or are not satisfied with our handling of any request by you in relation to your rights, you also have the right to make a complaint to the Information Commissioner's Office. Their address is: First Contact Team, Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, SK9 5AF.

What personal information we collect about you

We will collect and process the personal information that you give us by phone, e-mail, filling in forms, including on our website, and when you report a problem with our website. We also collect personal information from your appointed agent such as your trustee, broker, intermediary or financial adviser in order to provide you with the services you have requested and from other sources, such as credit reference agencies and other insurance companies, for verification purposes. We will also collect information you have volunteered to be in the public domain and other industry-wide sources. We will only collect personal information that we require to fulfil our contractual or legal requirements unless you consent to provide additional information. The type of personal information we will collect includes; basic personal information (i.e. name, address and date of birth), occupation and financial details, health and family information, claims and convictions information and where you have requested other individuals be included in the arrangement, personal information about those individuals.

If you give us personal information on other individuals, this will be used to provide you with a quotation and/or contract of insurance and/or provision of financial services. You agree you have their permission to do so. Except where you are managing the contract on another's behalf, please ensure that the individual knows how their personal information will be used by Zurich. More information about this can be found in the 'How we use your personal information' section.

How we use your personal information

We and our selected third parties will only collect and use your personal information (i) where the processing is necessary in connection with providing you with a quotation and/or contract of insurance and/or provision of financial services that you have requested; (ii) to meet our legal or regulatory obligations; or (iii) for our 'legitimate interests'. It is in our legitimate interests to collect

your personal information as it provides us with the information that we need to provide our services to you more effectively including providing you with information about our products and services. We will always ensure that we keep the amount of information collected and the extent of any processing to the absolute minimum to meet this legitimate interest. Examples of the purposes for which we will collect and use your personal information are:

1. to provide you with a quotation and/or contract of insurance;
2. to identify you when you contact us;
3. to deal with administration and assess claims;
4. to make and receive payments;
5. to obtain feedback on the service we provide to you;
6. to administer our site and for internal operations including troubleshooting, data analysis, testing, research, statistical and survey purposes;
7. for fraud prevention and detection purposes.

We will contact you to obtain consent prior to processing your personal information for any other purpose, including for the purposes of targeted marketing unless we already have consent to do so.

Who we share your personal information with

Where necessary, we will share the personal information you gave us for the purposes of providing you with the goods and services you requested with the types of organisations described below:

associated companies including reinsurers, suppliers and service providers;
introducers and professional advisers;
regulatory and legal bodies;
survey and research organisations;
credit reference agencies;
healthcare professionals, social and welfare organisations; and
other insurance companies

Or, in order to meet our legal or regulatory requirements, with the types of organisations described below:

regulatory and legal bodies;
central government or local councils;
law enforcement bodies, including investigators;
credit reference agencies; and
other insurance companies

How we use your personal information for websites and email communications

When you visit one of our websites we may collect information from you such as your email address or IP address. This helps us to track unique visits and monitor patterns of customer website traffic, such as who visits and why they visit.

We use cookies and/or pixel tags on some pages of our website. A cookie is a small text file sent to your computer. A pixel tag is an invisible tag placed on certain pages of our website but not on your computer. Pixel tags usually work together with cookies to assist us to provide you with a more tailored service. This allows us to monitor and improve our email communications and website. Useful information about cookies, including how to remove them, can be found on our websites.

How we transfer your personal information to other countries

Where we transfer your personal information to countries that are outside of the UK and the European Union (EU) we will ensure that it is protected and that the transfer is lawful. We will do this by ensuring that the personal information is given adequate safeguards by using 'standard contractual clauses' which have been adopted or approved by the UK and the EU, or other solutions that are in line with the requirements of European data protection laws.

A copy of our security measures for personal information transfers can be obtained from our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN, or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com ↗.

How long we keep your personal information for

We will retain and process your personal information for as long as necessary to meet the purposes for which it was originally

collected. These periods of time are subject to legal, tax and regulatory requirements or to enable us to manage our business.

Your data protection rights

You have a number of rights under the data protection laws, namely:

to access your data (by way of a subject access request);
to have your data rectified if it is inaccurate or incomplete;
in certain circumstances, to have your data deleted or removed;
in certain circumstances, to restrict the processing of your data;
a right of data portability, namely to obtain and reuse your data for your own purposes across different services;
to object to direct marketing;
not to be subject to automated decision making (including profiling), where it produces a legal effect or a similarly significant effect on you;
to claim compensation for damages caused by a breach of the data protection legislation.
if we are processing your personal information with your consent, you have the right to withdraw your consent at any time.

We will, for the purposes of providing you with a contract of insurance, processing claims, reinsurance and targeted marketing, process your personal information by means of automated decision making and profiling where we have a legitimate interest or you have consented to this.

What happens if you fail to provide your personal information to us

If you do not provide us with your personal information, we will not be able to provide you with a contract or assess future claims for the service you have requested.

Fraud prevention and detection

In order to prevent and detect fraud we may at any time:

check your personal data against counter fraud systems
use your information to search against various publicly available and third party resources
use industry fraud tools including undertaking credit searches and to review your claims history
share information about you with other organisations including but not limited to the police, the Insurance Fraud Bureau (IFB), other insurers and other interested parties.

If you provide false or inaccurate information and fraud is identified, the matter will be investigated and appropriate action taken. This may result in your case being referred to the Insurance Fraud Enforcement Department (IFED) or other police forces and fraud prevention agencies. You may face fines or criminal prosecution. In addition, Zurich may register your name on the Insurance Fraud Register, an industry-wide fraud database.

Claims history

We may pass information relating to claims or potential claims to any relevant database. We and other insurers may search these databases when you apply for insurance, when claims or potential claims are notified to us or at time of renewal to validate your claims history or that of any other person or property likely to be involved in the policy or claim.

This helps to check information provided and prevent fraudulent claims.

APPENDIX H

Environmental Search Report

Groundsure
LOCATION INTELLIGENCE

Enviro
Insight

COLLIERS PARK WREXHAM AFC TRAINING GROUND, CHESTER ROAD, GRESFORD, WREXHAM, LL12 8PW

Order Details

Date: 01/06/2026

Your ref: C6579 JM

Our Ref: BRO-PVB-TQT-BI4-IQB

Site Details

Location: 334396 354211

Area: 0.41 ha

Authority: Wrecsam - Wrexham County Borough Council ↗



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Summary of findings p. 2 >

OS MasterMap site plan p.11 >

Aerial image p. 6 >

Insight User Guide ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
12 >	1.1 >	Historical industrial land uses >	0	0	6	21	-
14	1.2	Historical tanks	0	0	0	0	-
14	1.3	Historical energy features	0	0	0	0	-
14	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
15	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
16 >	2.1 >	Historical industrial land uses >	0	0	9	34	-
18	2.2	Historical tanks	0	0	0	0	-
18	2.3	Historical energy features	0	0	0	0	-
19	2.4	Historical petrol stations	0	0	0	0	-
19	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
20	3.1	Active or recent landfill	0	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
21	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
21 >	3.4 >	Historical landfill (EA/NRW records) >	1	0	1	0	-
21	3.5	Historical waste sites	0	0	0	0	-
22	3.6	Licensed waste sites	0	0	0	0	-
22 >	3.7 >	Waste exemptions >	0	0	0	23	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
25 >	4.1 >	Recent industrial land uses >	1	1	0	-	-
26 >	4.2 >	National Geographic Database (NGD) - Current or recent tanks >	1	0	0	-	-
26	4.3	Current or recent petrol stations	0	0	0	0	-
26	4.4	Electricity cables	0	0	0	0	-
26	4.5	Gas pipelines	0	0	0	0	-

26	4.6	Sites determined as Contaminated Land	0	0	0	0	-
27	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.8	Regulated explosive sites	0	0	0	0	-
27	4.9	Hazardous substance storage/usage	0	0	0	0	-
27	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
27	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
28	4.13	Radioactive Substance Authorisations	0	0	0	0	-
28 >	**4.14 >**	**Licensed Discharges to controlled waters >**	0	0	0	1	-
28	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
29	4.16	Pollutant release to public sewer	0	0	0	0	-
29	4.17	List 1 Dangerous Substances	0	0	0	0	-
29	4.18	List 2 Dangerous Substances	0	0	0	0	-
29 >	**4.19 >**	**Pollution Incidents (EA/NRW) >**	0	0	1	0	-
30	4.20	Pollution inventory substances	0	0	0	0	-
30	4.21	Pollution inventory waste transfers	0	0	0	0	-
30	4.22	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Geology (basic) >**					
31 >	**5.1 >**	**Superficial geology (625k) >**	Identified (within 500m)				
31 >	**5.2 >**	**Bedrock geology (625k) >**	Identified (within 500m)				
Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
32 >	**6.1 >**	**Superficial aquifer >**	Identified (within 500m)				
34 >	**6.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
35 >	**6.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
36	6.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
36	6.5	Groundwater vulnerability- local information	None (within 0m)				
37 >	**6.6 >**	**Groundwater abstractions >**	0	0	0	0	2
38 >	**6.7 >**	**Surface water abstractions >**	0	0	0	0	1
39	6.8	Potable abstractions	0	0	0	0	0

39	6.9	Source Protection Zones	0	0	0	0	-
39	6.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
40	7.1	Water Network (OS NGD)	0	0	0	-	-
40 >	**7.2 >**	**Surface water features >**	0	0	1	-	-
41 >	**7.3 >**	**WFD Surface water body catchments >**	1	-	-	-	-
41 >	**7.4 >**	**WFD Surface water bodies >**	0	0	0	-	-
41 >	**7.5 >**	**WFD Groundwater bodies >**	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
43	8.1	Risk of flooding from rivers and the sea	None (within 50m)				
43	8.2	Historical Flood Events	0	0	0	-	-
43	8.3	Flood Defences	0	0	0	-	-
44	8.4	Areas Benefiting from Flood Defences	0	0	0	-	-
44	8.5	Flood Storage Areas	0	0	0	-	-
45	8.6	Flood Zone 2	None (within 50m)				
45	8.7	Flood Zone 3	None (within 50m)				
Page	Section	**Surface water flooding >**					
46 >	**9.1 >**	**Surface water flooding >**	1 in 100 year, 0.1m - 0.3m (within 50m)				
Page	Section	**Groundwater flooding >**					
48 >	**10.1 >**	**Groundwater flooding >**	Moderate (within 50m)				
Page	Section	**Environmental designations >**	On site	0-50m	50-250m	250-500m	500-2000m
49 >	**11.1 >**	**Sites of Special Scientific Interest (SSSI) >**	0	0	0	0	3
50 >	**11.2 >**	**Conserved wetland sites (Ramsar sites) >**	0	0	0	0	2
51	11.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	11.4	Special Protection Areas (SPA)	0	0	0	0	0
52	11.5	National Nature Reserves (NNR)	0	0	0	0	0
52 >	**11.6 >**	**Local Nature Reserves (LNR) >**	0	0	0	0	1
52 >	**11.7 >**	**Designated Ancient Woodland >**	0	0	0	3	54
55	11.8	Biosphere Reserves	0	0	0	0	0

55	11.9	Forest Parks	0	0	0	0	0
55	11.10	Marine Conservation Zones	0	0	0	0	0
55	11.11	Green Belt	0	0	0	0	0
55	11.12	Proposed Ramsar sites	0	0	0	0	0
56	11.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
56	11.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
56	11.15	Nitrate Sensitive Areas	0	0	0	0	0
56 >	**11.16 >**	**Nitrate Vulnerable Zones >**	0	0	0	0	1
58 >	**11.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
59	11.18	SSSI Units	0	0	0	0	0
Page	Section	**Visual and cultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
60	12.1	World Heritage Sites	0	0	0	-	-
61	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	12.3	National Parks	0	0	0	-	-
61 >	**12.4 >**	**Listed Buildings >**	0	0	1	-	-
62	12.5	Conservation Areas	0	0	0	-	-
62	12.6	Scheduled Ancient Monuments	0	0	0	-	-
62	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
63 >	**13.1 >**	**Agricultural Land Classification >**	Grade 4 (within 250m)				
64	13.2	Open Access Land	0	0	0	-	-
64	13.3	Tree Felling Licences	0	0	0	-	-
64	13.4	Environmental Stewardship Schemes	0	0	0	-	-
64	13.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	14.1	Priority Habitat Inventory	0	0	0	-	-
65	14.2	Habitat Networks	0	0	0	-	-
65	14.3	Open Mosaic Habitat	0	0	0	-	-
65	14.4	Limestone Pavement Orders	0	0	0	-	-

Recent aerial photograph



Capture Date: 01/06/2023

Site Area: 0.41ha

Recent site history - 2020 aerial photograph



Capture Date: 10/04/2020

Site Area: 0.41ha

Recent site history - 2013 aerial photograph



Capture Date: 09/06/2013

Site Area: 0.41ha

Recent site history - 2003 aerial photograph



Capture Date: 04/08/2003

Site Area: 0.41ha

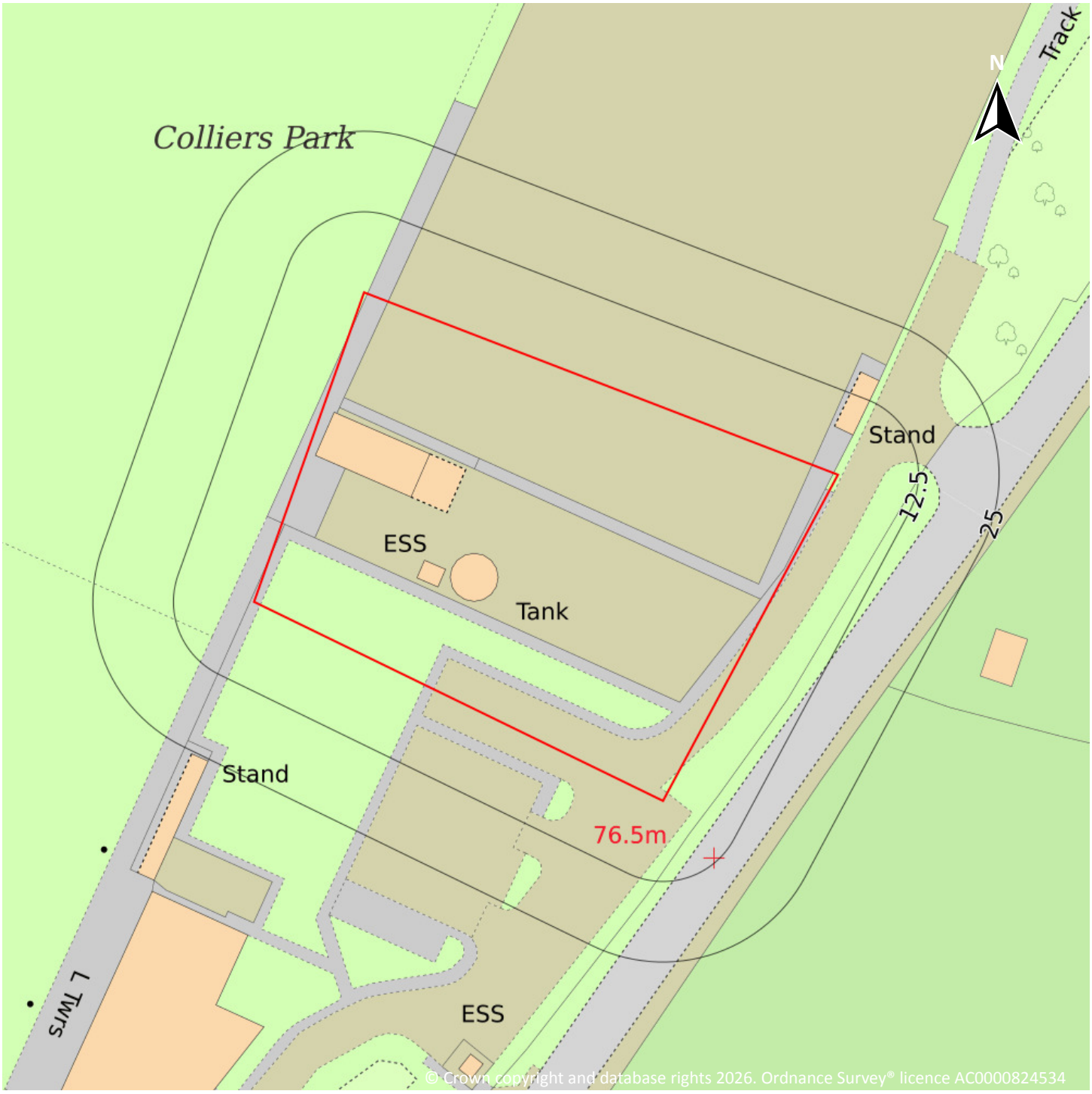
Recent site history - 2000 aerial photograph



Capture Date: 04/09/2000

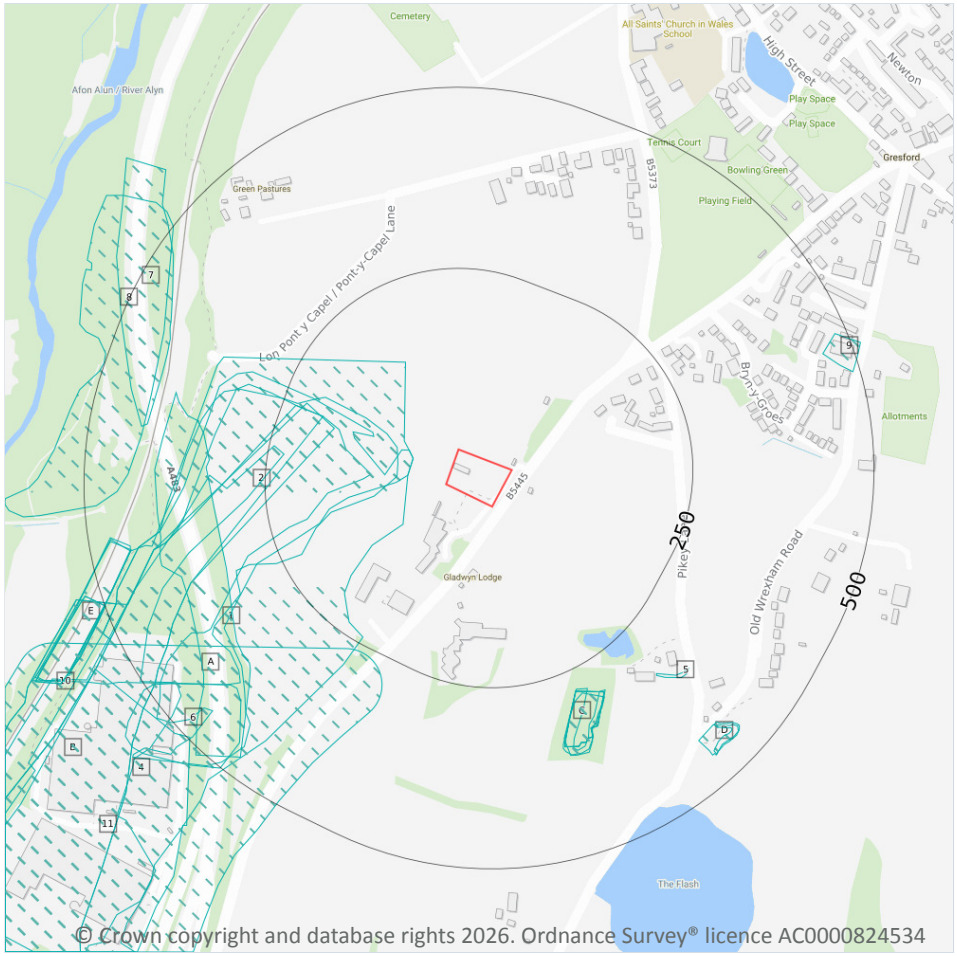
Site Area: 0.41ha

OS MasterMap site plan



Site Area: 0.41ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

1.1 Historical industrial land uses

Records within 500m	27

Potentially contaminative land use features digitised from historical Ordnance Survey® mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 12 >**

ID	Location	Land use	Dates present	Group ID
1	54m W	Unspecified Mine	1964	895312

ID	Location	Land use	Dates present	Group ID
A	54m W	Refuse Heap	1964 - 1980	879465
2	69m W	Refuse Heap	1949	912708
B	171m W	Railway Sidings	1964	970092
B	192m W	Railway Sidings	1974 - 1980	920201
3	228m W	Railway Sidings	1949	937737
4	260m SW	Colliery	1949	859473
C	278m SE	Unspecified Ground Workings	1909	982480
C	280m SE	Old Gravel Pit	1898	839500
C	280m SE	Unspecified Pit	1872	965173
C	280m SE	Unspecified Pit	1938 - 1949	974733
C	286m SE	Unspecified Ground Workings	1938	885415
A	320m W	Cuttings	1989 - 1992	965463
5	323m SE	Unspecified Ground Workings	1949	815957
6	403m SW	Refuse Heap	1949	955282
7	419m W	Cuttings	1989 - 1992	956620
8	425m W	Refuse Heap	1974 - 1985	909695
D	429m SE	Unspecified Pit	1938 - 1949	968960
D	429m SE	Unspecified Ground Workings	1909	815956
E	444m W	Cuttings	1938	879525
E	444m W	Cuttings	1909	947441
E	445m W	Cuttings	1949	868273
9	458m E	Telecomm Exchange	1985 - 1992	1005490
10	484m W	Railway Sidings	1974 - 1980	965191
11	497m SW	Unspecified Commercial/Industrial	1985	960430
E	499m W	Cuttings	1872	938460
E	499m W	Cuttings	1900	960585

This data is sourced from Ordnance Survey® / Groundsure.

1.2 Historical tanks

Records within 500m	0

Tank features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

1.3 Historical energy features

Records within 500m	0

Energy features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

1.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

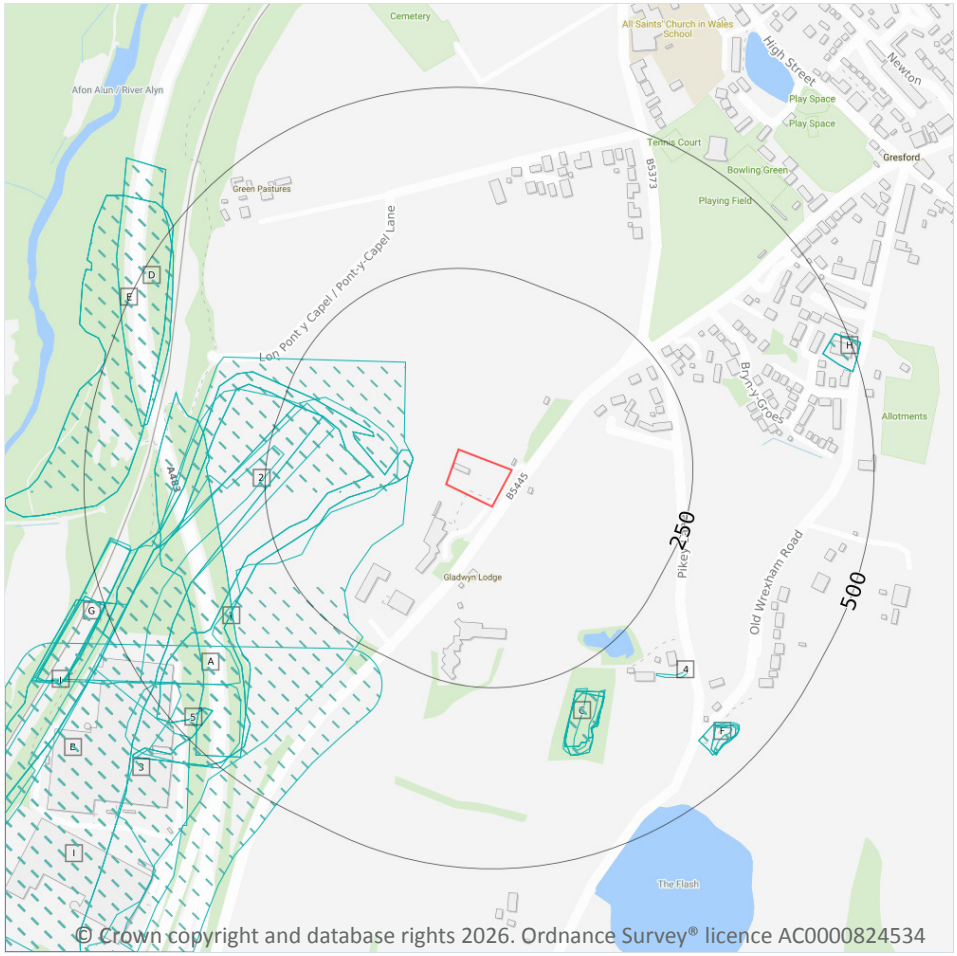
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey® / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

2.1 Historical industrial land uses

Records within 500m	43

Potentially contaminative land use features digitised from historical Ordnance Survey® mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 16 >**

ID	Location	Land Use	Date	Group ID
1	54m W	Unspecified Mine	1964	895312
A	54m W	Refuse Heap	1980	879465
A	54m W	Refuse Heap	1974	879465

ID	Location	Land Use	Date	Group ID
A	54m W	Refuse Heap	1964	879465
2	69m W	Refuse Heap	1949	912708
B	171m W	Railway Sidings	1964	970092
B	192m W	Railway Sidings	1980	920201
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C	280m SE	Unspecified Pit	1949	974733
C	280m SE	Unspecified Pit	1872	965173
C	280m SE	Old Gravel Pit	1898	839500
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A	320m W	Cuttings	1989	965463
A	320m W	Cuttings	1992	965463
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F	432m SE	Unspecified Pit	1938	968960
F	432m SE	Unspecified Pit	1938	968960

ID	Location	Land Use	Date	Group ID
G	444m W	Cuttings	1938	879525
G	444m W	Cuttings	1909	947441
G	445m W	Cuttings	1949	868273
H	458m E	Telecomm Exchange	1989	1005490
H	458m E	Telecomm Exchange	1992	1005490
H	458m E	Telecomm Exchange	1985	1005490
I	462m SW	Railway Sidings	1949	937737
J	484m W	Railway Sidings	1980	965191
J	484m W	Railway Sidings	1974	965191
I	497m SW	Unspecified Commercial/Industrial	1985	960430
G	499m W	Cuttings	1900	960585
G	499m W	Cuttings	1872	938460

This data is sourced from Ordnance Survey® / Groundsure.

2.2 Historical tanks

Records within 500m	0

Tank features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

2.3 Historical energy features

Records within 500m	0

Energy features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

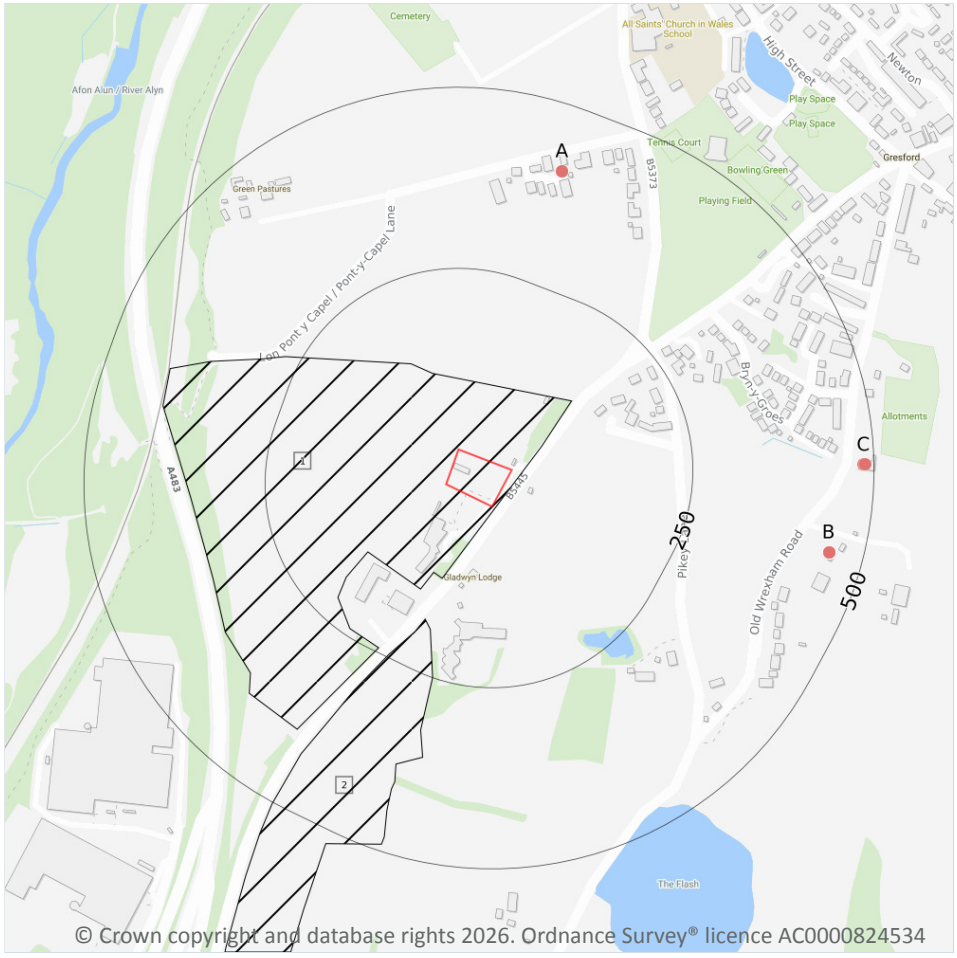
2.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey®/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	2

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 20 >**

ID	Location	Details		
1	**On site**	**Site Address: Pont-Y-Capel Lane, Gresford, Wrexham, Clwyd Licence Holder Address: Hooton, South Wirral, Cheshire**	**Waste Licence: Yes Site Reference: - Waste Type: Industrial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 02/07/1987 Licence Surrender: -**	**Operator: - Licence Holder: Alfred McAlpine Construction Limited First Recorded 31/08/1987 Last Recorded: 31/12/1988**
2	180m SW	Site Address: Chester Road, Gresford Licence Holder Address: Hooton, South Wirral, Cheshire	Waste Licence: Yes Site Reference: WMBC L/45 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 02/07/1987 Licence Surrender: 31/12/1987	Operator: - Licence Holder: Alfred McAlpine Construction Limited First Recorded 01/08/1987 Last Recorded: 30/09/1988

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey®/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	23

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 20 >**

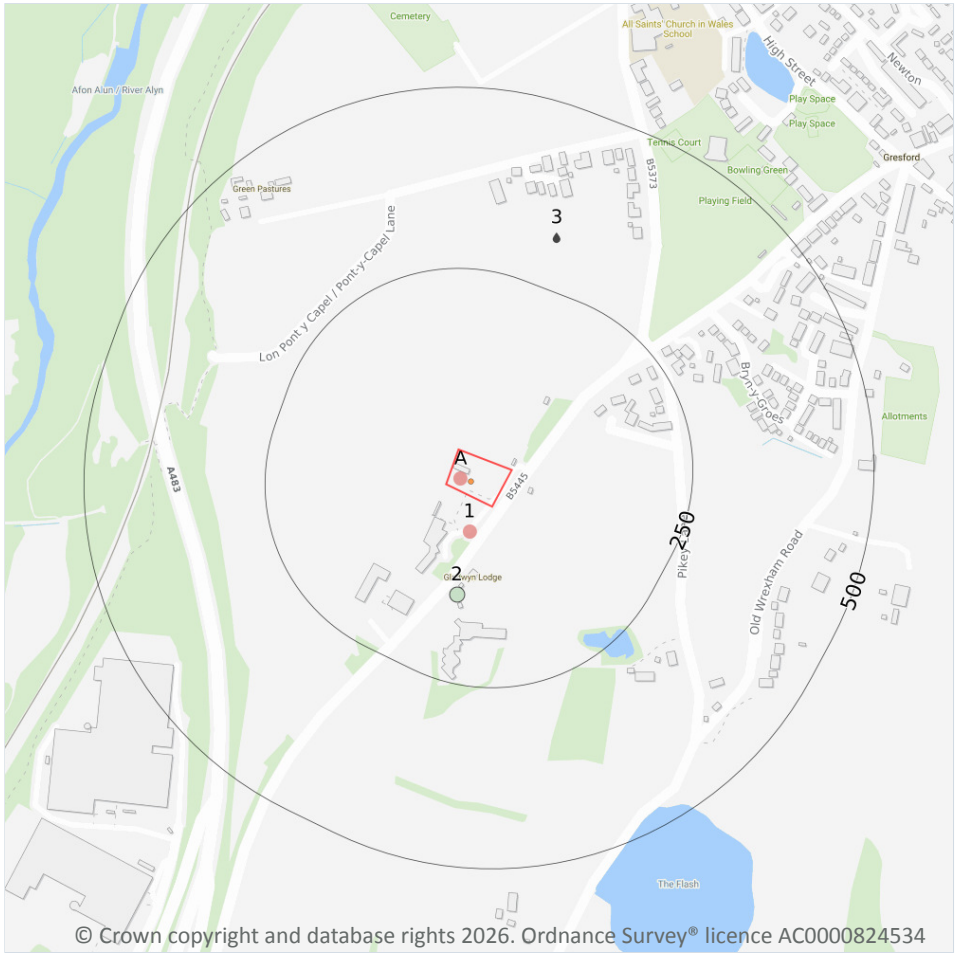
ID	Location	Site	Reference	Category	Sub-Category	Description
A	409m N	Dcww, Clapper Farm, Pont Y Capel Lane, Gresford, Wrexham, Wrecsam, Ll128rs	NRW-WME035073	Storing waste exemption	Not on a farm	Storage of sludge
A	409m N	Dcww, Clapper Farm, Pont Y Capel Lane, Gresford, Wrexham, Wrecsam, Ll128rs	NRW-WME035203	Storing waste exemption	Not on a farm	Storage of sludge
A	409m N	Dcww, Clapper Farm, Pont Y Capel Lane, Gresford, Wrexham, Wrecsam, Ll128rs	NRW-WME035061	Storing waste exemption	Not on a farm	Storage of sludge
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Storing waste exemption	On a farm	Storage of waste in secure containers
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Storing waste exemption	On a farm	Storage of waste in a secure place
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Storing waste exemption	On a farm	Storage of sludge
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Recovery of central heating oil by filtration
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Preparatory treatments (baling, sorting, shredding etc)

ID	Location	Site	Reference	Category	Sub-Category	Description
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Using waste exemption	On a farm	Use of waste in construction
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Using waste exemption	On a farm	Spreading waste on non-agricultural land to confer benefit
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Using waste exemption	On a farm	Burning of waste as a fuel in a small appliance
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Treatment of waste food
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Anaerobic digestion at premises used for agriculture and burning of resultant biogas
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Screening and blending of waste
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Recovery of scrap metal
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Disposing of waste exemption	On a farm	Burning waste in the open
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Sorting mixed waste
B	452m E	Caia Farm, Old Wrexham Road, Gresford, Wrexham, Ll12 8ua	WEX066795	Treating waste exemption	On a farm	Manual treatment of waste

ID	Location	Site	Reference	Category	Sub-Category	Description
C	485m E	Caia Farm, Old Wrexham Road, Wrexham, Wrecsam, Ll12 8ua	NRW-WME000901	Disposing of waste exemption	Waste exemption - agricultural and non-agricultural	Burning waste in the open
C	487m E	Byproduct Services Ltd, Caia Cottage, Old Wrexham Road, Gresford, Wrexham, Wrecsam, Ll12 8ua	NRW-WME053232	Storing waste exemption	Not on a farm	Storage of waste in secure containers

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

NGD current or recent tanks

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25 >**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Electricity Sub Station**	**Clwyd, LL12**	**Electrical Features**	**Infrastructure and Facilities**
1	45m SW	Electricity Sub Station	Clwyd, LL12	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey®.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	1

Current or recent tanks identified from the Ordnance Survey® NGD.

Features are displayed on the Current industrial land use map on **page 25 >**

ID	Location	Tank description	Activity	Date first identified
A	**On site**	**Roofed Storage Tank**	**Commercial Activity: Distribution Or Storage**	**03/09/2019**

This data is sourced from Ordnance Survey®.

4.3 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.7 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.8 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.9 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.10 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.12 Licensed pollutant release (Part A(2)/B)

Records within 500m	0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Licensed Discharges to controlled waters

Records within 500m	1

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 25 >**

ID	Location	Address	Details	
3	322m N	LAND AT REAR OF CLAPPER FARM, PONT-Y-CAPEL LANE, GRESFORD, NR WREXHAM, NORTH WALES, LL12 8RS	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0451601 Permit Version: 0 Receiving Water: Groundwater via infiltration system	Status: Effective Issue date: 27/03/2007 Effective Date: 27/03/2013 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution Incidents (EA/NRW)

Records within 500m	1

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 25 >**

ID	Location	Details	
2	131m S	Incident Date: 29/08/2014 Incident Identification: 1274235 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.20 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.22 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Geology (basic)

5.1 Superficial geology (625k)

Records within 500m	1

Generalised geology data based on BGS's published poster maps of the UK (North and South). Superficial related themes digitised from 1977 first edition Quaternary map (North and South).

Location	Lex code	Description	Rock type
On site	**GSG-SAGR**	**GLACIAL SAND AND GRAVEL**	**SAND AND GRAVEL**

This data is sourced from the British Geological Survey.

5.2 Bedrock geology (625k)

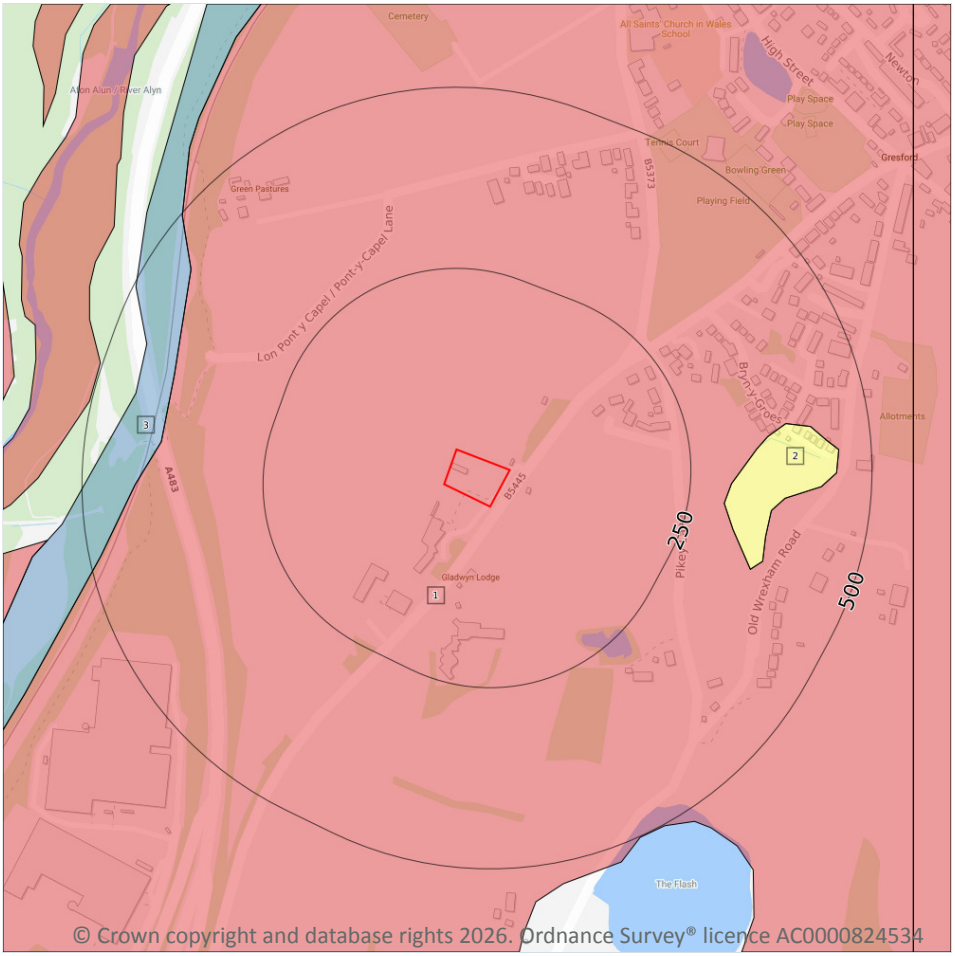
Records within 500m	1

Generalised geology data based on BGS's published poster maps of the UK (North and South). Bedrock related themes created through generalisation of 1:50,000 data.

Location	Lex code	Description	Rock type
On site	**WAWK-SISDM**	**WARWICKSHIRE GROUP**	**SILTSTONE AND SANDSTONE WITH SUBORDINATE MUDSTONE**

This data is sourced from the British Geological Survey.

6 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

6.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

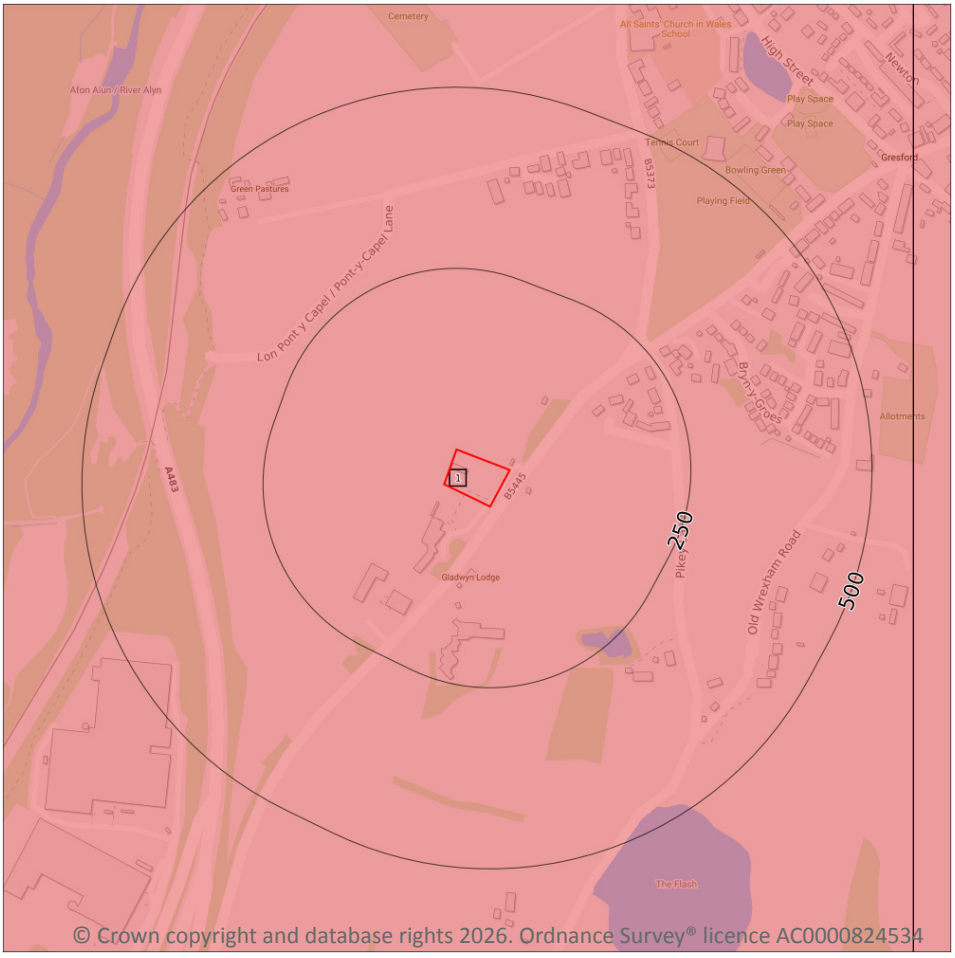
Features are displayed on the Hydrogeology map on **page 32 >**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	300m E	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	394m W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

6.2 Bedrock aquifer

Records within 500m	1

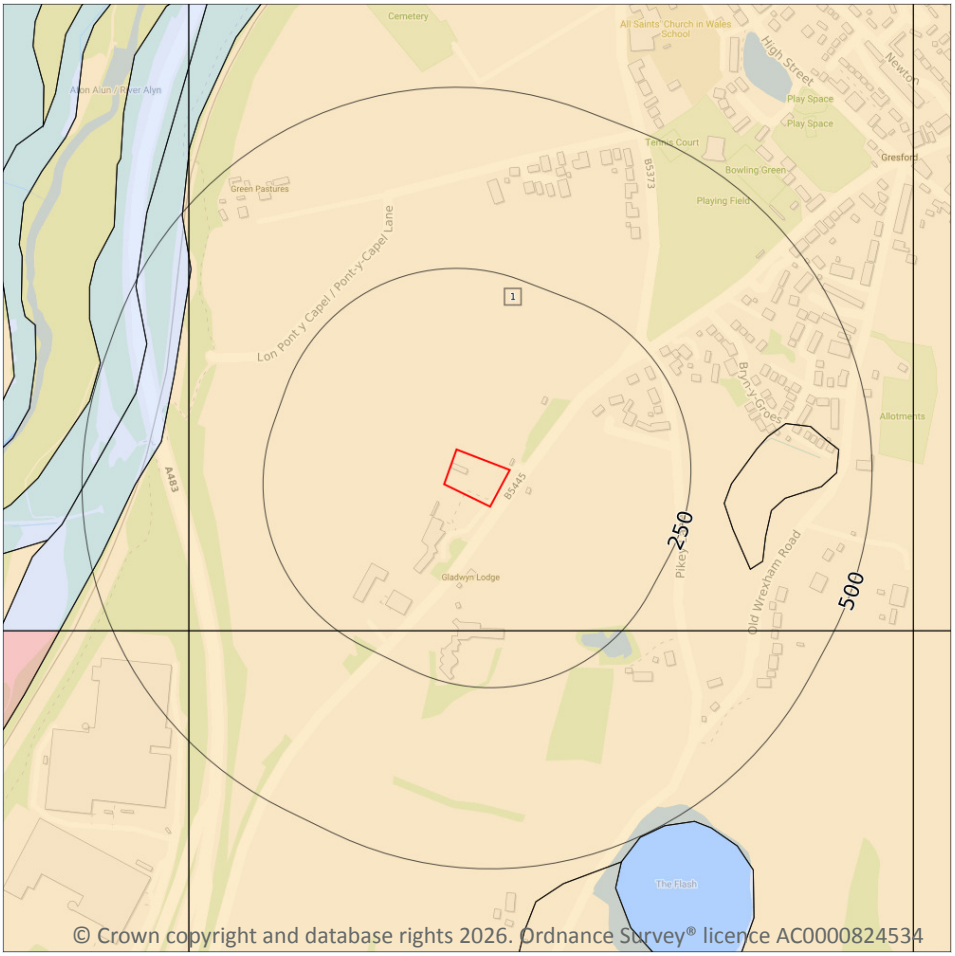
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 34 >**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

6.3 Groundwater vulnerability

Records within 50m	1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 35 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

6.4 Groundwater vulnerability- soluble rock risk

Records on site	0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

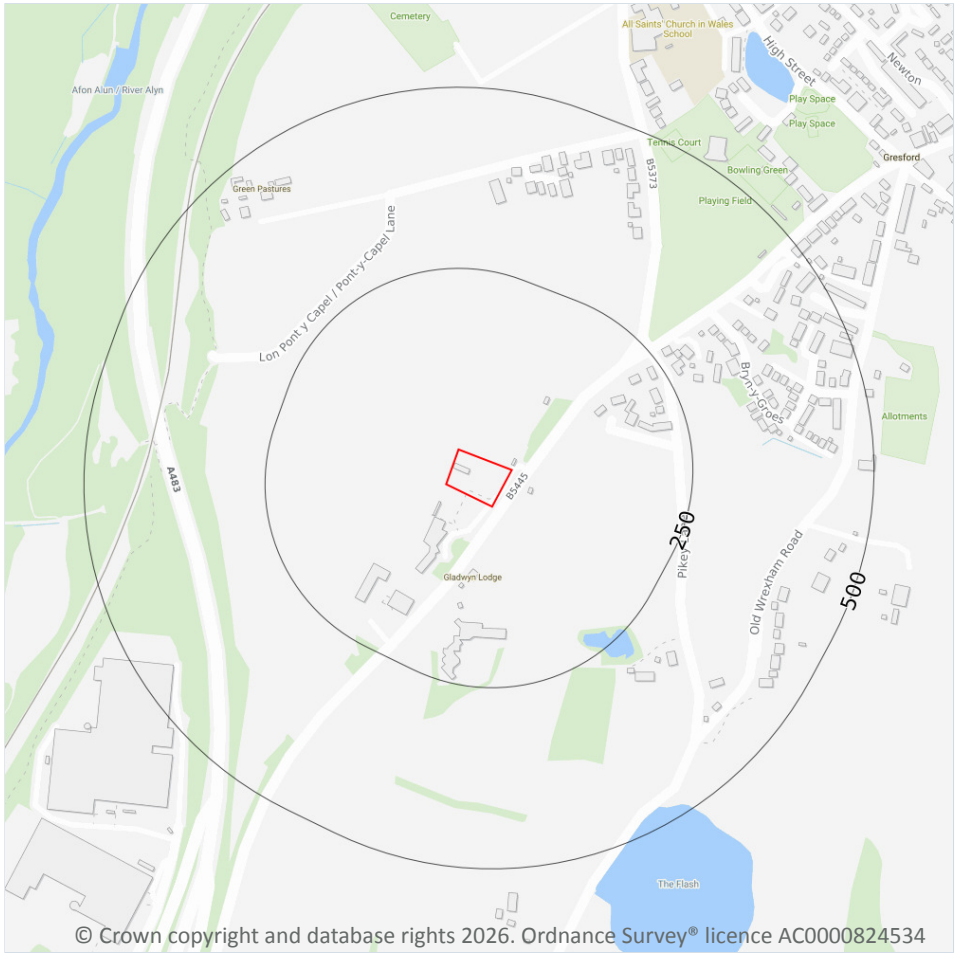
6.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

6.6 Groundwater abstractions

Records within 2000m	2

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 37 >**

ID	Location	Details	
-	778m S	Status: Historical Licence No: 24/67/8/0017 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL 1 Data Type: Point Name: Jones Easting: 334620 Northing: 353421	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 09/08/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1995 Version End Date: -
-	890m S	Status: Historical Licence No: 24/67/8/0017 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL 2 Data Type: Point Name: Jones Easting: 334640 Northing: 353310	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 09/08/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1995 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

6.7 Surface water abstractions

Records within 2000m	**1**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 37 >**

ID	Location	Details	
-	1155m N	Status: Historical Licence No: 24/67/8/0052 Details: Mineral Washing Direct Source: EAW Surface Water Point: RIVER ALYN Data Type: Point Name: Tarmac Limited Easting: 334480 Northing: 355400	Annual Volume (m^3): 166929 Max Daily Volume (m^3): 545.52 Original Application No: - Original Start Date: 14/06/1968 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2008 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

6.8 Potable abstractions

Records within 2000m	0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

6.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

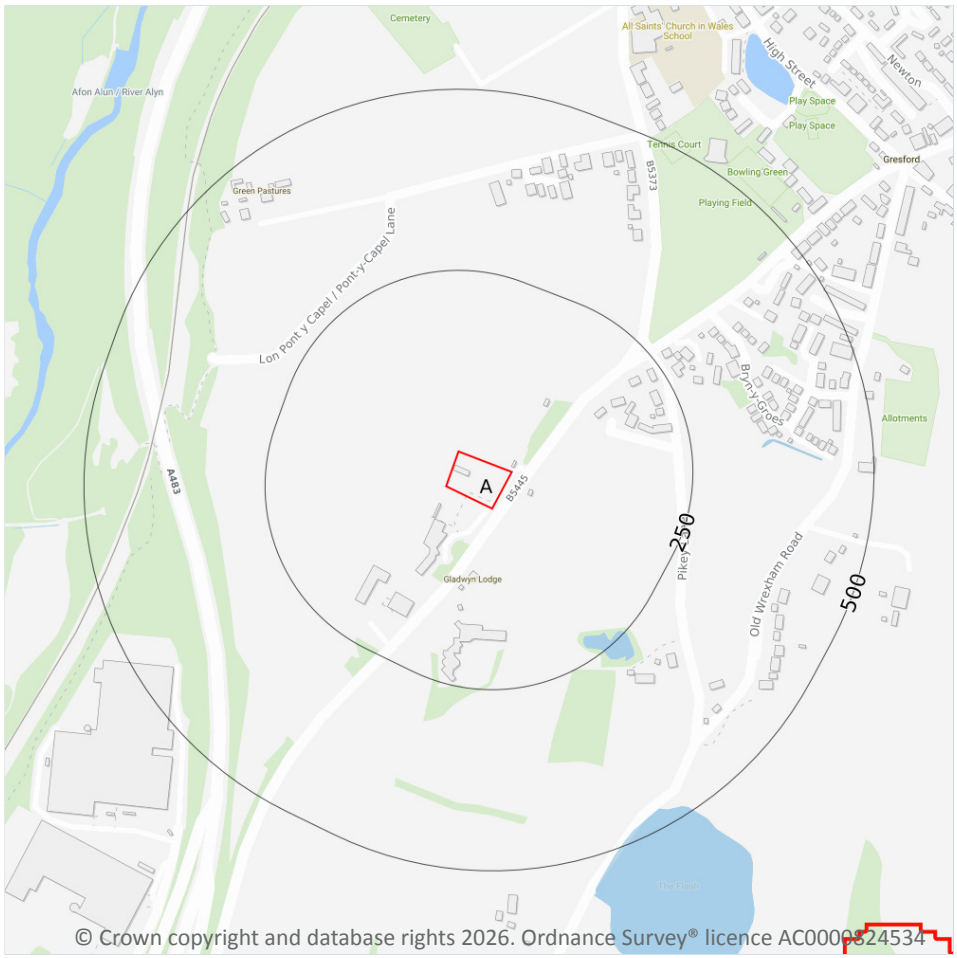
6.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

7 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS NGD)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

7.1 Water Network (OS NGD)

Records within 250m	0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey®.

7.2 Surface water features

Records within 250m	1

Covering rivers, streams and lakes (some overlap with OS NGD Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 40 >**

This data is sourced from the Ordnance Survey®.

7.3 WFD Surface water body catchments

Records on site	1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 40 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Alyn - Hope to Dee**	**GB111067052173**	**Alyn**	**Dee**

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 WFD Surface water bodies

Records identified	1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 40 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	577m W	River	Alyn - Hope to Dee	GB111067052173	Moderate	High	Moderate	2024

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 WFD Groundwater bodies

Records on site	1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 40 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Dee Carboniferous Coal Measures**	**GB41102G204800**	**Poor**			**2021**

This data is sourced from the Environment Agency and Natural Resources Wales.

8 River and coastal flooding

8.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

8.2 Historical Flood Events

Records within 250m	0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

8.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

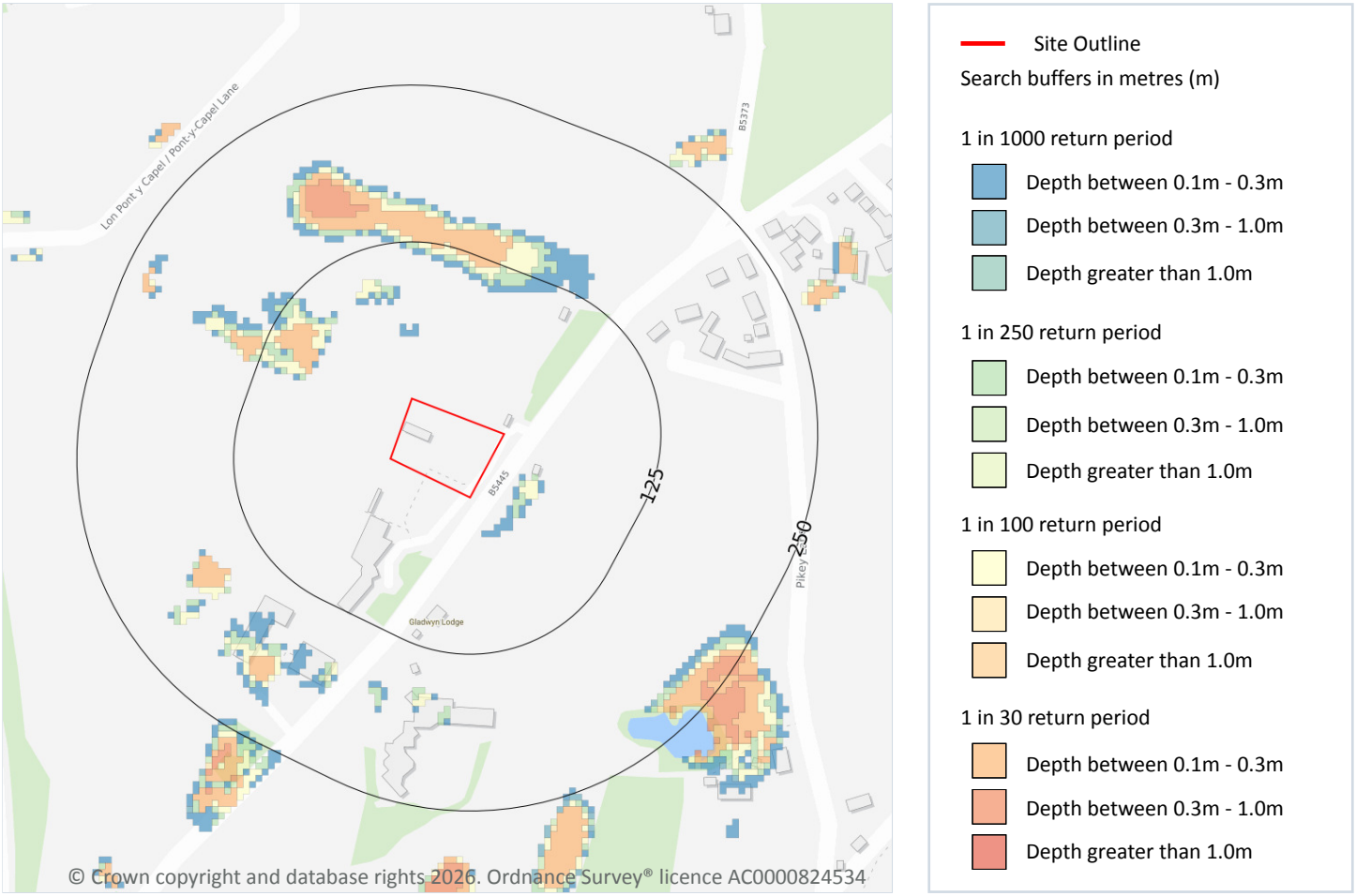
8.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

9 Surface water flooding



9.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**1 in 100 year, 0.1m - 0.3m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 46 >**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

10 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

10.1 Groundwater flooding

Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 48 >**

This data is sourced from Ambiental Risk Analytics.

11 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Conserved wetland sites (Ramsar sites)

Local Nature Reserves (LNR)

Designated Ancient Woodland

11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	3

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 49 >**

ID	Location	Name	Data source
-	1224m E	Vicarage Moss	Natural Resources Wales

ID	Location	Name	Data source
-	1745m NE	Marford Quarry	Natural Resources Wales
-	1884m N	Chwarel Singret	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	**2**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

Features are displayed on the Environmental designations map on **page 49 >**

ID	Location	Site	Details
-	1224m E	Name: Midland Meres & Mosses Phase 2 (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Meres and Mosses form a geographically diverse series of lowland open water and peatland sites in the north-west Midlands of England and north-east Wales. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 18 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats, reed swamp, fen, carr and damp pasture. Peat accumulation has resulted in the nutrient-poor peat bogs (mosses) forming in some sites on the fringes of the meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora and fauna. Ramsar criteria: Ramsar criterion 1 The site comprises a diverse range of habitats from open water to raised bog. Ramsar criterion 2 Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane Cicuta virosa and, elongated sedge Carex elongata. Also present are the nationally scarce bryophytes Dicranum affine and Sphagnum pulchrum. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth Glyphipteryx lathamella, the caddisfly Hagenella clathrata and the sawfly Trichiosoma vitellinae.

ID	Location	Site	Details
-	1224m E	Name: Midland Meres & Mosses Phase 2 Site status: Listed Data source: Natural England	Overview: The Meres and Mosses form a geographically diverse series of lowland open water and peatland sites in the north-west Midlands of England and north-east Wales. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 18 component sites include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats, reed swamp, fen, carr and damp pasture. Peat accumulation has resulted in the nutrient-poor peat bogs (mosses) forming in some sites on the fringes of the meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora and fauna. Ramsar criteria: Ramsar criterion 1 The site comprises a diverse range of habitats from open water to raised bog. Ramsar criterion 2 Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane Cicuta virosa and, elongated sedge Carex elongata. Also present are the nationally scarce bryophytes Dicranum affine and Sphagnum pulchrum. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth Glyphipteryx lathamella, the caddisfly Hagenella clathrata and the sawfly Trichiosoma vitellinae.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 Special Areas of Conservation (SAC)

Records within 2000m	**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.4 Special Protection Areas (SPA)

Records within 2000m	**0**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.6 Local Nature Reserves (LNR)

Records within 2000m	1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 49 >**

ID	Location	Name	Data source
24	1354m NW	Alyn Waters	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.7 Designated Ancient Woodland

Records within 2000m	57

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

Features are displayed on the Environmental designations map on **page 49 >**

ID	Location	Name	Woodland Type
1	353m W	Unknown	Restored Ancient Woodland Site
2	380m W	Unknown	Restored Ancient Woodland Site
3	447m NW	Unknown	Ancient Semi Natural Woodland
4	547m NW	Unknown	Ancient Semi Natural Woodland
A	590m NW	Unknown	Restored Ancient Woodland Site
A	647m N	Unknown	Ancient Semi Natural Woodland

ID	Location	Name	Woodland Type
A	682m N	Unknown	Ancient Semi Natural Woodland
B	713m NW	Unknown	Ancient Semi Natural Woodland
5	763m W	Unknown	Restored Ancient Woodland Site
6	766m NW	Unknown	Restored Ancient Woodland Site
B	776m NW	Unknown	Restored Ancient Woodland Site
7	810m N	Unknown	Restored Ancient Woodland Site
8	818m NW	Unknown	Restored Ancient Woodland Site
9	827m N	Unknown	Restored Ancient Woodland Site
10	884m N	Unknown	Ancient Semi Natural Woodland
11	906m W	Unknown	Ancient Semi Natural Woodland
C	915m W	Unknown	Ancient Semi Natural Woodland
D	940m SE	Unknown	Restored Ancient Woodland Site
12	964m W	Unknown	Ancient Semi Natural Woodland
13	977m N	Unknown	Ancient Semi Natural Woodland
14	995m SE	Unknown	Restored Ancient Woodland Site
15	1034m SW	Unknown	Ancient Semi Natural Woodland
D	1044m S	Unknown	Restored Ancient Woodland Site
16	1076m N	Unknown	Restored Ancient Woodland Site
E	1084m SW	Unknown	Ancient Semi Natural Woodland
17	1112m N	Unknown	Ancient Semi Natural Woodland
E	1137m SW	Unknown	Ancient Semi Natural Woodland
C	1168m W	Unknown	Ancient Semi Natural Woodland
18	1180m N	Unknown	Restored Ancient Woodland Site
19	1193m SW	Unknown	Ancient Semi Natural Woodland
20	1270m NE	Unknown	Ancient Semi Natural Woodland
-	1311m W	Unknown	Ancient Semi Natural Woodland
22	1316m SW	Unknown	Ancient Semi Natural Woodland
23	1346m N	Unknown	Ancient Semi Natural Woodland

ID	Location	Name	Woodland Type
-	1360m W	Unknown	Ancient Semi Natural Woodland
-	1393m N	Unknown	Ancient Semi Natural Woodland
-	1413m N	Unknown	Restored Ancient Woodland Site
-	1433m N	Unknown	Ancient Semi Natural Woodland
29	1436m NE	Unknown	Plantation on Ancient Woodland Site
-	1597m W	Unknown	Ancient Semi Natural Woodland
-	1602m E	Unknown	Ancient Semi Natural Woodland
-	1602m E	Unknown	Restored Ancient Woodland Site
-	1606m NE	Unknown	Ancient Semi Natural Woodland
-	1636m N	Unknown	Restored Ancient Woodland Site
-	1641m NW	Unknown	Ancient Semi Natural Woodland
-	1656m E	Unknown	Plantation on Ancient Woodland Site
-	1658m W	Unknown	Ancient Semi Natural Woodland
-	1672m NE	Unknown	Restored Ancient Woodland Site
-	1685m SW	Unknown	Ancient Semi Natural Woodland
-	1734m N	Unknown	Ancient Semi Natural Woodland
-	1751m NE	Unknown	Restored Ancient Woodland Site
-	1783m N	Unknown	Ancient Semi Natural Woodland
-	1787m SW	Unknown	Ancient Semi Natural Woodland
-	1795m W	Unknown	Ancient Semi Natural Woodland
-	1873m S	Unknown	Ancient Semi Natural Woodland
-	1946m N	Unknown	Ancient Semi Natural Woodland
-	1975m N	Unknown	Ancient Semi Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

11.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

11.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

11.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

11.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

11.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

11.16 Nitrate Vulnerable Zones

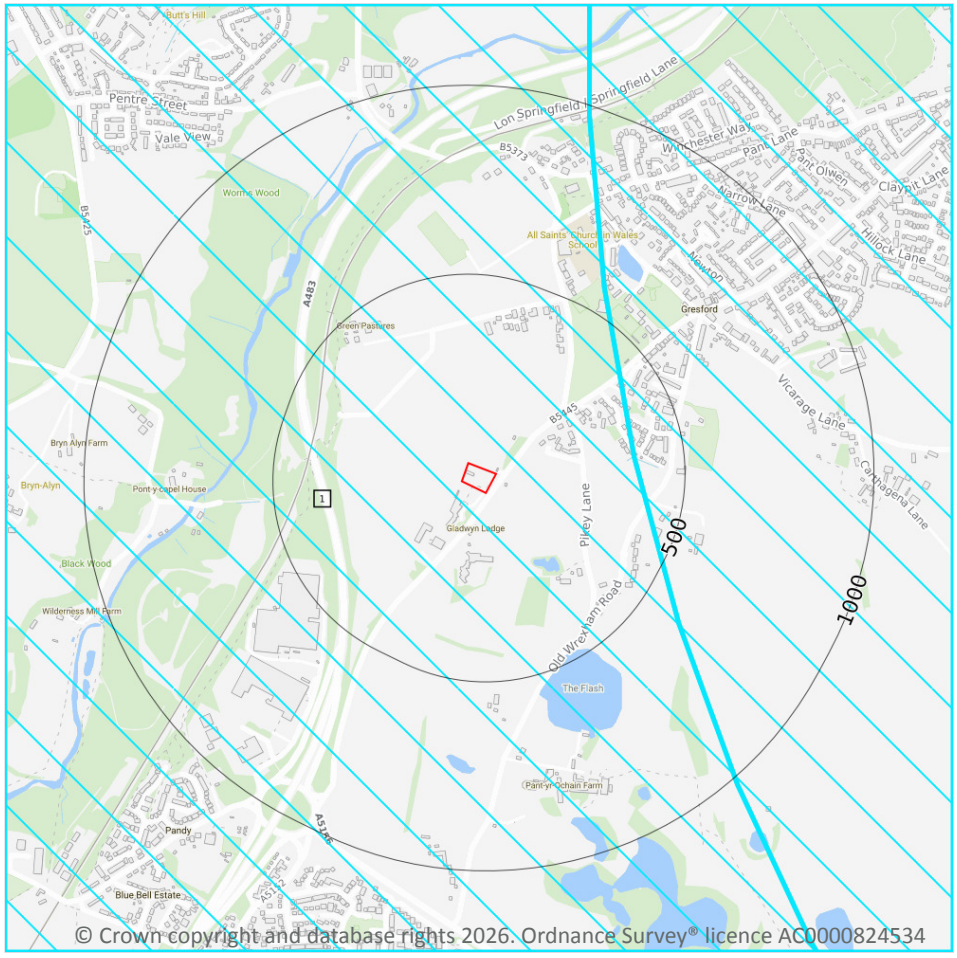
Records within 2000m	1

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
1957m N	Pulford Brook NVZ	Surface Water	707	Existing

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units



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11.17 SSSI Impact Risk Zones

Records on site	1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 58 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0000000630000&notes=&location=328222,346690%20(IRZ%20polygon%20centre)**

This data is sourced from Natural England.

11.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

12 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

12.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

12.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

12.4 Listed Buildings

Records within 250m	1

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 60 >**

ID	Location	Name	Grade	Reference Number	Listed date
1	242m NE	Base Of Cross, Situated On A Traffic Island At The Junction Of Chester Road (B5445) And The B5373 At The Sw Edge Of The Village	II	1592	07/06/1963

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

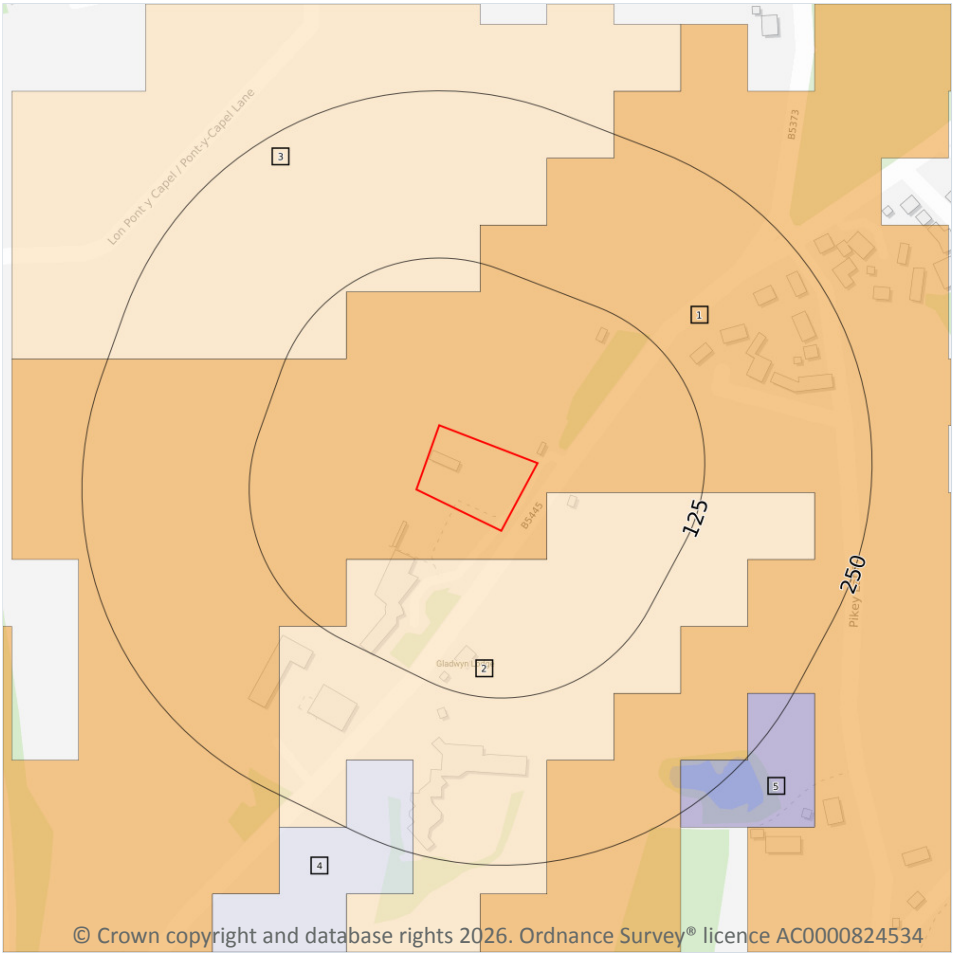
12.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

13 Agricultural designations



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Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

13.1 Agricultural Land Classification

Records within 250m	5

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 63 >**

ID	Location	Classification	Description
1	**On site**	**Grade 2**	**Good quality agricultural land**
2	17m SE	Grade 3a	Good to moderate quality agricultural land
3	85m NW	Grade 3a	Good to moderate quality agricultural land

ID	Location	Classification	Description
4	184m S	Grade 3b	Moderate quality agricultural land
5	218m SE	Grade 4	Poor quality agricultural land

This data is sourced from Natural Resources Wales.

13.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

13.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

13.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

13.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

14 Habitat designations

14.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

14.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

14.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

14.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

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